

Final Environmental Impact Statement

For
Rockland Lake, Hook Mountain, Nyack Beach and
Haverstraw Beach State Parks

July 10, 2013



Governor
Andrew M. Cuomo

Rose Harvey
Commissioner



Jim Hall
Executive Director

Final Environmental Impact Statement

for the

Rockland Lake, Hook Mountain, Nyack Beach, and Haverstraw Beach State Parks Master Plan

Town of Clarkstown, Rockland County

Prepared by

The New York State Office of Parks, Recreation
and Historic Preservation
and the Palisades Interstate Park Commission

Completed: July 10, 2013

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SEQR
NOTICE OF COMPLETION OF A FINAL
ENVIRONMENTAL IMPACT STATEMENT

Date of Notice: July 10, 2013

Lead Agency: New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and the Palisades Interstate Park Commission (PIPC)

Title of Action: **Adoption and Implementation of a Master Plan for Rockland Lake, Hook Mountain, Nyack Beach and Haverstraw Beach State Parks**

SEQR Status: Type I

Location of Action: Town of Clarkstown, Rockland County

This Notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review) of the Environmental Conservation Law. A Final Plan and Final Environmental Impact Statement (FEIS) on the proposed action has been prepared and accepted by OPRHP and PIPC. The Executive Summary of the Master Plan/FEIS describes the proposed action, the environmental setting, alternatives and potential environmental impacts and mitigation.

Agencies and the public are afforded the opportunity to consider the FEIS. This consideration period ends on July 22, 2013. Copies of the Final Plan/FEIS are available for review at the offices of the agency contacts and at New City Library, 220 N. Main Street, New City, Nyack Library, 59 South Broadway, Nyack and Valley Cottage Library, 110 Route 303, Valley Cottage.

The online versions of the Master Plan and DEIS are available at the following publically accessible web site: <http://nysparks.com/inside-our-agency/master-plans.aspx>

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Executive Summary

An Executive Summary is provided below to conform to SEQRA requirements and provide a brief summary of the master plan and the Environmental Impact Statement (EIS). For additional information please see the EIS and master plan.

Planning and Environmental Review

The environmental review of proposed master plans for state park facilities is conducted in accordance with the State Environmental Quality Review Act (SEQR). Under SEQR, agencies consider environmental impacts along with social and economic factors early in the decision-making and planning/project design process. Land use or resource management plans are considered Type I actions under SEQR, that is, they are likely to have a significant impact on the environment and therefore require preparation of an Environmental Impact Statement (EIS). OPRHP/PIPC fully integrates the planning and environmental review processes.

Guiding Principles and Policies

Overarching OPRHP/PIPC program principles, policies, and goals and objectives provide a foundation for planning, development, operation, and management decisions made during the master plan process. The following sections summarize current directives considered throughout the planning process for the park complex.

The OPRHP/PIPC planning process adheres to three basic principles:

- Planning must be coordinated and provide for public participation: cooperation among appropriate governmental organizations, the public at large, special interest groups and the private sector is not only desirable, but necessary.
- Planning is a continuing process: assumptions for the classification and management of park resources must be constantly reevaluated in light of new information, changing needs and priorities, and resource character.
- Planning must be comprehensive: the information base, and pertinent additional research, should support the planning process and should encompass relevant social, economic and physical factors relating to the management and operation of the park and its resources.

OPRHP has developed a number of agency-wide policies to address management issues commonly faced by the park system. Policies cover topics such as the management of trees and other vegetation, pesticide use, wildfire and controlled burns, oil, gas and mineral rights, wildlife management, and native plants. Please visit our website to view our Agency policies - <http://nysparks.com/environment/documents.aspx>.

Land and Water Conservation Fund

The park complex has received funding through the National Park Services' Land and Water Conservation Fund. Acceptance of this federal funding includes a requirement that these facilities remain in public outdoor recreation use in perpetuity. Any proposals for uses other than public outdoor recreation require the prior approval of the National Park Service to lift the use restriction through a process known as "conversion." Please visit the following website for more information. <http://www.nps.gov/nrcr/programs/lwcf/manual/lwcf.pdf>

Environmental Setting

The information below provides a brief introduction to the existing conditions in the park complex. For a more complete description of the environmental setting and various resources of the parks please refer to Chapter One of the Final Environmental Impact Statement.

Physical Resources

The more recent geology of the park has been significantly altered by the erosional forces of the Wisconsin Glacial Episode, which retreated 10,000 years ago.

Continental drift and tectonic plate movement in the late Triassic Period lifted and eroded bedrock, exposed the Palisades Sill forming what is known regionally as The Palisades.

The topography begins at sea level along the edge of the Hudson River. From the river westward, the mountain rises steeply to approximately 620' at the top of the Hook Mountain ridge. Continuing westward from Hook Mountain, the topography then descends to approximately 157' at Rockland Lake. Rockland Lake State Park is located on a mix of flat to undulating/sloped terrain.

The main soil types in the park complex consist of a mix of well drained, sandy loams to moist, poorly drained soils and rock outcrops.

The primary water resources of the park complex are Rockland Lake and the Hudson River. There are some small unnamed streams and a variety of wetlands.

The park complex is located in the New York, New Jersey, Connecticut, and Long Island non-attainment area for failing to meet the National Ambient Air Quality Standard for air pollutants, specifically, ozone and fine particulates (EPA 2008).

Natural Resources

The dominant forest types found within the park complex are Appalachian oak-hickory forest, Chestnut-oak forest and Successional southern hardwoods. In general, the flora in these forest communities is similar in composition to other large natural areas of the Hudson Highlands such as Bear Mountain, Harriman, and Sterling Forest State Parks.

Invasive plant species in the park complex include black swallow-wort (*Cynanchum vincetoxicum*), mile-a-minute weed (*Persicaria perfoliata*), Japanese honeysuckle (*Lonicera japonica*), shrub honeysuckle (*Lonicera morrowii*, *L. tatarica*), garlic mustard (*Alliaria petiolata*), and water chestnut (*Trapa natans*).

The park complex supports a varied assemblage of fauna that is typical for the area. The populations of white-tailed deer (*Odocoileus virginianus*), Canada geese (*Branta canadensis*), turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*) have been increasing in and around the park complex and have begun to have negative impacts on natural resources and operations.

Cultural Resources

The area surrounding Rockland Lake has a very rich history starting with the Native American habitation. As the Dutch began to settle this area, Native Americans began to move north and west looking for new land. Dutch settlement in this area was slow primarily due to the rocky conditions encountered here. As time went on, more settlers came to the area wishing to escape the congestion downstream in what was once New Amsterdam (New York City).

This area was also a very important location during the Revolutionary War period. In 1780 American General Benedict Arnold and the British spy John André exchanged the plans to the fort at West Point.

As the settlements surrounding Rockland Lake grew, so did the local industries. The area was a very important supplier of brick, ice and quarry rock to the local area and to New York City throughout the 1800's and into the 1900's.

Many of the historic structures and sites found on Hook Mountain, Nyack Beach and Haverstraw State Parks are remnants of a former park complex developed by PIPC after the purchase of the land in the early 1900's. Structures and sites such as foundations, walls and stairways in Rockland Lake State Park are components of former residential structures which were demolished upon the development of the park.

Archeological documentation on the park is limited. Archeological sites surrounding the park indicate that there is both a pre-contact (Native American) and historic (Euro-American) component to the archaeological sites near the park. Environmental factors such as proximity to the Hudson River increase the potential for archeological sensitivity in the park and surrounding area.

Scenic Resources

Expansive scenic vistas of the Hudson River Valley and beyond are provided at various points on Hook Mountain and Nyack Beach State Parks. These ridge-top vistas have been a significant part of the region through both the pre-contact and the historic periods and are even more pronounced due to the quarry operations of the 19th century. The scenic characteristics of Hook Mountain from the Hudson River Valley and surrounding communities have been well documented. Artists of all types have used the mountain as a backdrop including the "Hudson River School", a mid-19th century American art movement embodied by a group of landscape painters. Vistas of the Hudson River can also be found along the shoreline on the Hudson River Bikeway. Additionally, many scenic areas can be found surrounding Rockland Lake that provide significant scenic vistas of the lake, flora and surrounding topography.

Recreational Resources/Activities

The park complex is heavily used for its diverse range of both passive and active recreational resources. It offers a variety of recreational opportunities including picnicking, hiking, bicycling, fishing, court and field games, golfing, geocaching, boating, swimming and cross-country skiing.

The park complex has almost 15 miles of trail including 5 miles of multi-use trail along the Hudson River, 3 miles of multi-use trail surrounding Rockland Lake and 6 miles of The Long Path for hiking.

Rockland Lake State Park is very heavily used during the summer season for picnicking, swimming walking, bicycling, golfing and field activities. On warm summer weekends and holidays, the park is filled to capacity. Rockland Lake State Park has two 18-hole golf courses, a Championship Golf Course and an Executive Golf Course.

The parks' education and interpretation programs take place in the nature center and also at various locations throughout the park through educational panels which describe the natural and cultural environments.

Generally, the recreational activities take place on Hook Mountain, Nyack Beach and Haverstraw Beach including picnicking, bicycling, walking, dog walking, fishing and relaxing.

Agency Mission and Vision Statement

Agency Mission Statement

The mission of OPRHP/PIPC is to provide safe and enjoyable recreational and interpretive opportunities for all New York State residents and visitors and to be responsible stewards of our valuable natural, historic and cultural resources.

Vision Statement

Rockland Lake, Hook Mountain, Nyack Beach and Haverstraw Beach State Parks will continue to provide diverse recreation and education opportunities and proper stewardship of its natural and cultural resources, while seeking to reconnect park visitors to the Hudson River and the unique history of the riverside parks. These parks will be revitalized by providing new and updated day use facilities in the upland areas, improved access and interpretative opportunities along the riverfront and enhanced stewardship and interpretation of its unique history and natural resources.

Analysis & Alternatives

The master plan presents a series of “preferred alternatives” for future development and operation of the park complex. Cumulatively, the actions described below present OPRHP/PIPC’s long-term vision for the enhancement of these parks.

The Master Plan

The master plan considers the historic, natural and recreational resources of the parks and responds to recreational needs and safety of park patrons, protection of cultural and natural resources and principles of sustainability. The plan sets forth a long-term vision to guide future development of new and enhanced park facilities. The initiation of each specific action will be determined by the level of funding available to OPRHP/PIPC in future years.

Recreation Facility Development and Programs

South Recreation Area

The South Pool Area, parking lot and recreational field area will be expanded and reconfigured into a court and field recreation complex. The parking lot will be paved using porous asphalt and reconfigured to improve the spacing and sizing of recreational fields and parking lot access. Recreational fields will remain open and available for all allowed uses. The entrance roadway will be improved to expand vehicular stacking room and reduce or eliminate impacts to traffic flow on Route 9W. A larger fee booth will be constructed which includes electricity for lighting, air conditioning and to accept electronic transactions. The former bathhouse will be converted to a facility which meets the needs of the court and field users, spectators and other day users.

North Pool Area

The North Pool will be rehabilitated. The area is easily monitored by park administration which will provide improved safety and security of the area. The pool will use a “zero entrance” design allowing all patrons to walk into the pool unimpeded. The bathhouse will be redesigned to provide improved services and convenience to park patrons. As part of this redesign, the Program Room and

Park Office will be updated to meet current standards. To further improve safety, security and increase enforcement of park policies, the Park Police will have an office in the building.

Cultural Resources

The park manager's house will be converted to a cultural resource center. The former River Park structures, which are now in ruins, will be protected and stabilized where appropriate. A plan will be developed for the protection and preservation of all cultural resources in the park complex. The State Historic Preservation Office (SHPO) will be consulted for these actions.

Natural Resources

Existing policies and practices concerning invasive species, wildlife and nuisance species will continue to be implemented. Rockland Lake's water quality will continue to be monitored and protected.

Golf Courses

Both the Executive and the Championship Golf Courses irrigation systems will be improved using current design standards to improve irrigation efficiency and reduce the labor and maintenance associated with the current system. Drainage issues will be addressed as needed during construction. Landscaping will be improved where appropriate to improve play.

Picnicking opportunities

To improve the picnicking in Picnic Area 5, additional shade trees will be planted on the southern portion of that area. Picnic area 3 will be converted to a reservable picnic area and a covered shelter/pavilion will be constructed for large group use. The South Recreational Area will include additional picnicking including three covered shelters/pavilions and a tree-shaded picnic area.

Trail Systems

The River Trail has been eroded by past storms. This erosion will be addressed through construction projects. Regional staff will assess damaged areas and develop a plan for restoration. Interpretive panels will be placed at key locations along the trail describing the park's resources.

The Rockland Lake Trail will be improved to reduce user conflict and increase safety by adding a two to three foot wide gravel shoulder along the trail for runners wishing to use a natural surface. Gravel will be installed as funding and time allows or with the construction of an adjacent project and avoid impacts to trees without consultation with the regional biologist. OPRHP/PIPC will seek partnerships with user groups for development of this project.

The Landing Road Trail will be constructed as a paved multi-use trail connecting Parking Lot 2 to the Long Path and the Cultural Resource Center (see Goal 11 for the Cultural Resource Center.) Improvements to The Long Path will be coordinated with the New York/New Jersey Trail Conference, OPRHP and PIPC staff to develop sustainable strategies to reduce erosion in certain locations and address regularly moist areas. Additional signage and blazing will be installed following *Trail Signage Guidelines for the New York State (NYS) Park System* (<http://nysparks.com/recreation/trails/technical-assistance.aspx>).

The undesignated parking area on Landing Road will be eliminated. The sole designated trailhead for the Long Path will be Parking Lot 2. Patrons wishing to hike on the trail will walk an additional quarter mile on the Landing Road Trail.

Sustainability

Sustainability is a philosophy on how to improve, operate and maintain State Parks and Historic Sites, while at the same time, minimizing or reducing impacts on the environment.

Sustainability looks at the whole rather than the individual parts to maximize energy efficiency and minimize environmental impact, reduce use of fossil fuels, reduce or eliminate hazardous substances, protect biodiversity and ecosystems, and use resources carefully, respectfully and efficiently to meet current needs without compromising the needs of other living creatures and the use of those resources by future generations.

OPRHP and PIPC are committed to reducing its impact on the environment and to becoming more carbon neutral by adopting more sustainable practices in park development, improvement, operation and maintenance. Sustainable practices and alternatives were considered in the planning process and incorporated throughout the master plan.

Implementation

Timeline

The master plan sets forth OPRHP/PIPC's vision for capital improvements and operational enhancements to the park complex for the next ten to fifteen years. OPRHP/PIPC has not developed detailed cost estimates for the proposed components. Cumulatively they will cost tens of millions of dollars to implement. The pace and sequencing of recommended actions will be determined by the availability of funding, which is a function of the size of OPRHP's and PIPC's annual capital budgets and the need to balance investments throughout both park systems. The master plan will be reviewed annually to select projects that will be added to the park complex's budget for implementation and to assess the progress of plan implementation.

The implementation of the master plan for the park complex is divided into three priority phases. The priority groupings described below are conceptual and subject to reorganization based on available funding for specific components in any given group.

Table 1 Priority Phases

Implementation Priorities	Description/Development Component
Immediate:	A Bird Conservation Area is designated.
Priority 1:	Repave Knickerbocker Road. Rehabilitate the North Pool, Park Office and Bathhouse. Construct a heated area for winter use, wash pad, restroom and small covered storage area at the North Maintenance Area. Install the Championship Course irrigation system and dredge supply pond. Address drainage issues as needed. Install the Executive Course irrigation system and dredge supply pond. Address drainage issues as needed. Stabilize the Landing Road culvert Rehabilitate the Nyack Beach seawall and retaining wall. Rehabilitate Championship Course bunkers and cart path. Rehabilitate Executive Course bunkers and cart path. Construct maintenance storage area by the Championship Course. Prune or remove trees above the Nyack Bathhouse. Coordinate with volunteers to improve hiking trails. Partner with groups to improve interpretation. Construct playground between Lot 1 and 2. Construct the South Recreational Area. Redevelop Parking Lot 4 (South Lot). Rockland Lake Trail and River Trail improvements.
Priority 2:	Stabilize key River Park structures/develop plan. Renovate the Lot 6 comfort station. Develop a park-wide cultural resource plan for structures and sites. Construct a comfort station near the Nature Center. Rehabilitate the Nature Center and boardwalk. Construct basketball courts on Parking Lot 2. Plant shade trees and construct fee booth in picnic area 5. Redevelop Parking Lot 1 (North Lot). Construct a reservable picnic shelter near Parking Lot 3.

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Priority 3:	Construct a playground near the Nature Center.
	Remove former wastewater treatment plant and construct a covered area for roadway salt and sand storage.
	Identify a new Park Manager’s residence.
	Convert Park Manager’s house into a Cultural Resource Center.
	Construct trail from Parking Lot 2 to Landing Road.
	Construct trail from Landing Road to the Cultural Resource Center.
	Construct the Landing Road Parking Lot.
	Implement natural resource management strategies for invasive species, wildlife, stormwater, wetlands, streams, the Hudson River and scenic vistas.
Ongoing:	Implement natural resource management strategies for invasive species, wildlife, storm water, wetlands, streams, the Hudson River and scenic vistas.

Chapter 1 - Environmental Setting

Introduction

The park complex consists of four OPRHP/PIPC properties – Rockland Lake, Hook Mountain, Haverstraw Beach and Nyack Beach State Parks – totaling 1,943 acres. Rockland Lake, totaling 1,133 acres, is the most intensely developed of the facilities offering two golf courses, swimming pool, trails, recreational fields, picnicking and fishing opportunities. Hook Mountain is 676 acres and includes trails and many scenic vistas. Haverstraw Beach is 73 acres and includes a small trailhead for access to the trail network. Nyack Beach is 61 acres and offers access to the trail system, scenic vistas, fishing opportunities along the Hudson River, a car top boat access point and large group rental opportunities in the former bathhouse.

Location and Access

The park complex is located on the Hudson River in central Rockland County in the lower Hudson Valley. It is accessed by State Route 9W, a two lane state highway. The park is approximately an hour north of Manhattan (See Figure 1 – *Location Map*). The park complex has four entrances and is generally accessed by personal vehicle. Two vehicle entrances are located at Rockland Lake, one at Haverstraw Beach, and the last is located at Nyack Beach. Public bus stops are located near the south and north entrances, bringing both patrons and staff to the park. Access to the park by train is not directly provided, however, bus access to the park from the Tarrytown Train Station is available.

In the southern portion of the park, sidewalks are located adjacent to parkland on State Route 9W and in the local community. Patrons regularly use these sidewalks to access the park trail network. Pedestrian access to the park from the north is not as convenient. Sidewalks are not provided adjacent to the park, forcing pedestrians on the roadway edge.

Pedestrian/bicycle access is provided to Hook Mountain and Rockland Lake State Parks from both Haverstraw Beach and Nyack Beach along the Hook Mountain/Nyack Beach Bikeway/River Trail. The Long Path, a through-trail, is provided to allow hiking access to and from the park. The Long Path runs through Hook Mountain State Park along the ridge-top, connecting to High Tor and Bear Mountain State Parks to the north and Blauvelt State Park to the south. Connectivity to the other parks in the park complex is also provided through this trail system.

For patrons wishing to bring their bicycles to the park, Rockland and Westchester County Department of Transportation buses provide a “bike on bus” service allowing patrons to access the park with their bicycles.

Access from the east side of the Hudson River can be achieved by use of the Haverstraw-Ossining Ferry that provides access to the Village of Haverstraw, approximately one mile from the entrance to Haverstraw Beach State Park and the Hook Mountain/Nyack Beach Bikeway.

Recreational Needs Assessment

The park complex attracts primarily local users on the weekdays, with additional visitors from surrounding counties on summer weekends. Given its location, the service area for the park includes seven NY counties and boroughs: Rockland, Orange, Kings, Queens, Richmond, Bronx, and New York, with a total population of nearly 11 million people. In addition, many visitors come from Bergen County, NJ* that has a population of almost 900,000.

According to the 2009 NYS Statewide Comprehensive Outdoor Recreation Plan (SCORP), picnicking, playground use, and other general outdoor activities identified as “relaxing in the park” continues to be the recreation activity enjoyed by most New York residents. This is followed by walking/jogging, visiting museums/historic sites, swimming, and biking. Statewide, walking/jogging has the highest total of activity days followed by relaxing in parks, swimming, visiting museums/historic sites, and biking (OPRHP 2009). Picnicking and general outdoor recreation are intense weekend activities at Rockland Lake.

The Relative Index of Needs (RIN) in SCORP ranks recreational needs in a county by assigning a numerical scale (10 being the highest need and 1 being the lowest) to an activity by considering the supply of recreation facilities and the level of participation and estimating how that level of participation will change in the future. The RIN for the service area of the park complex shows the recreational ranking for the seven boroughs and counties in the service area.

Using a formula that includes the RIN numbers and the activity days within each county, a weighted average score is produced for each activity. These weighted scores illustrate that the activities with the highest relative index of need in the service area are as follows: relaxing in the park, biking, hiking, cross-country skiing, snowmobiling, downhill skiing, field games, camping, and visiting historic sites. (See Table 2) Using these numbers, these are the activities that will, over the period 2005 to 2025, experience the greatest growth in the service area relative to the existing supply of resources and conditions.

Table 2 - Recreational Index of Needs for the Service Area of the park complex

Activity	Kings	Queens	Richmond	Rockland	Orange	Bronx	New York	Weighted Average
Relaxing in the Park	10	10	10	5	5	8	10	9.4
Swimming	7	8	7	6	7	7	7	7.1
Biking	10	10	10	8	7	10	10	9.8
Golfing	7	6	6	5	5	6	6	6.0
Walking for pleasure	10	10	10	7	6	10	10	9.8
Tennis	6	6	6	6	4	6	6	5.9
Court Games	7	7	5	4	4	7	7	6.8
Field Games	10	10	10	4	6	9	10	9.5
Visiting Historic Sites	10	10	9	5	5	8	9	9.2
Camping	10	10	10	7	7	10	10	9.3
Hiking/backpacking	10	10	10	9	7	10	10	9.7
Boating	6	6	7	5	7	6	6	6.1
Fishing	6	6	7	6	6	6	6	5.9
Local Winter	9	8	8	6	4	10	10	8.9
X-Country Skiing	10	10	10	9	7	10	10	9.5
Downhill Skiing	10	10	10	8	6	10	10	9.7
Snowmobile	10	10	10	6	6	10	10	8.0

* The service area for the park complex includes Bergen County, New Jersey. New Jersey does not calculate its recreational needs as a weighted index and is not included in this table.

Economic Contribution

In March 2009, a study prepared for Parks & Trails New York by the Political Economy Research Institute (PERI), University of Massachusetts-Amherst, found that the combination of annual state and visitor spending at all New York State Parks supports up to \$1.9 billion in economic output and business sales and up to 20,000 jobs throughout the state. Out of the \$1.9 billion, the Palisades Region alone supports \$94,000,000 in economic output and approximately 1,052 jobs. The New York City area supports \$61,000,000 in economic output and 716 jobs. State expenditures were \$253,100,000 for operating expenses and \$87,000,000 for capital improvements. Visitor expenditures within the service area were estimated to be between \$946,000,000 and \$1,948,000,000 annually.

Park Boundaries

The park complex occupies approximately 1,943 acres within the towns of Clarkstown, Nyack, and Haverstraw. To the east, it is bordered by the Hudson River. To the north it is bordered by the Village of Haverstraw and to the south it is bordered by the village of Upper Nyack. The western portion of the park is adjacent to the Town of Clarkstown. In general the park complex is bordered by a heavily developed mix of residential and commercial zoning. See Figure 2 – *Park Boundary Map*.

Surrounding Land Uses

The park complex is adjacent to a mix of residential communities and commercial development. To the northwest of the park exists a large quarry operation. Along the southern portion of the park boundary, residential development is the sole land use. The Hudson River, to the east is used for recreation and transportation of goods. Several local parks provide recreational opportunities within close proximity including Kings Park, Congers Lake Memorial Park and Twin Pond Park. See Figure 3 - *Adjacent Land Use Map*.

Partnerships

Camp Venture

Camp Venture, Inc. is a not-for-profit provider of family-like care and services to children and adults with developmental disabilities. Since 2001, PIPC has leased the former Rockland Lake School Building to Camp Venture, which offers a range of programs and services to meet nearly any need of people with developmental disabilities.

The Long Path

The New York-New Jersey Trail Conference has constructed and maintained *The Long Path* on Hook Mountain for many years.

Tappan Zee Scenic District

Areas within Nyack's waterfront boundary have been designated under Article 49 of the Environmental Conservation Law as part of the Tappan Zee Scenic District. Local governments within the jurisdiction of the Scenic District are encouraged to prepare a management plan for the included lands and waters.

The Tappan Zee Scenic District begins at the New York-New Jersey state line and continues north along the west shore of the Hudson River to include the portion of Hook Mountain State Park south of Rockland Lake. (Nyack 1992)

National Natural Landmark (NNL)

In 1980, a 150-acre portion of Hook Mountain and the adjacent Nyack Beach State Park were registered as a NNL. The site contains geological deposits that are characteristic of the filling of basins during the rifting and opening of the North Atlantic Basin 180-200 million years ago.

New York State Important Bird Area (IBA)

Hook Mountain was designated a New York State IBA in 1997.

Concessions Operations

Both the Championship and the Executive Golf Courses are operated by a concessions service provided include: tee-time reservations, golf cart rental, food court concession, and a pro-shop concession. All vending machine and poolside food concession sales are contracted through a vending corporation.

Programs

Coastal Zone Management Program (CZMP)

The park complex is located within NY's coastal area. In addition it is located within both the Village of Haverstraw and Upper Nyack's Local Waterfront Revitalization Plan (LWRP) boundaries. LWRPs provide guidance and direction to promote the beneficial use of coastal

resources and limit adverse impacts. Local and State actions within LWRP areas need to be consistent with State and Local Coastal Zone policies.

For more information on local LWRP's please visit the following Websites.

Village of Nyack

<http://nyack-ny.gov/docs/1992-local-waterfront-revitalization-program/>

Village of Haverstraw

http://nyswaterfronts.com/LWRP/Village%20of%20Haverstraw/default/Village_of_Haverstraw_LWRP.htm

New York State Significant Coastal Fish and Wildlife Habitat

The portion of the Hudson River that borders the park has also been designated by the NYS Coastal Management Program as having significant coastal fish and wildlife habitats. Please visit the NYS Department of State's Web page www.nyswaterfronts.com/ for more information.

Legal Considerations

There are several private inholdings in Rockland Lake State Park however; these properties do not possess any known deed restrictions and/or legal constraints. Encroachment issues are present on certain adjacent inholding boundaries. Rockland Lake Road, which surrounds much of Rockland Lake, is county owned and maintained. Other easements have been granted through the park for a railroad line, transcontinental cable line and overhead power lines and should be considered upon the location of facilities or recreational components.

Physical Resources

Geology

The more recent geology of the park has been significantly altered by the erosional forces of the Wisconsin Glacial Episode, which retreated 10,000 years ago. Previous to these alterations, during the Devonian Period (360 million years ago), deltas formed from the formation of mountains in central New York. At the same time, global sea levels fell causing the shallow seas to retreat from the northeastern U.S. The sea continued to exist for a time in other parts of the continental United States. The great coal beds of Pennsylvania result from coastal forests that covered this area during the Carboniferous Period, immediately after the Devonian. By the start of the age of dinosaurs around 240 million years ago, the region was dry land. Although dinosaurs left their footprints in the red sandstones of the Connecticut River Valley of Massachusetts and Connecticut, barely a trace of them remains in this region. Only a single set of fossil footprints is known in New York and is near the Village of Nyack. This is because most rocks of the Mesozoic age (240 - 65 million years ago during the period of the dinosaurs) have been removed by erosion leaving much of the underlying bedrock exposed.

Bedrock

The end of the Triassic Period saw large-scale rifting during the break-up of Pangaea. What is now eastern North America began to separate from what is now north-western Africa. Magma was generated and a portion of it was intruded into the sandstones and arkoses of the Stockton Formation

within the Newark Basin, one of the Eastern North America Rift Basins. The magma would eventually solidify and, after millions of years, the bedrock overlying this solidified magma would be uplifted and eroded, exposing the Palisades Sill forming what is known as “The Palisades”. This layer of rock is clearly visible and comprises the exposed cliffs along the western shore of the Hudson River on Hook Mountain. See Figure 4 – *Bedrock Geology Map*.

Topography

The topography at its low point begins at sea level along the edge of the Hudson River. From the river, the mountain rises steeply to approximately 620’ at the top of the Hook Mountain ridge. Moving westward from Hook Mountain, the topography then descends to approximately 157’ at Rockland Lake. Rockland Lake State Park is located on a mix of flat to undulating/sloped terrain. See Figure 5 – *Topography Map* and Figure 6 – *Slope Map*.

Soils

The ecological landscapes in the park are generally related to the soils beneath them. The main soil types in the park consist of a mix of well drained, sandy loams to moist, poorly drained soils and rock outcrops. The majority of Hook Mountain, Nyack Beach, and Haverstraw Beach are comprised of the Holyoke-Rock Outcrop Complex (Figure 4) with very minimal, shallow soil present. A more diverse range of soils is present surrounding Rockland Lake, ranging from well drained soils such as the Alden silt loams (Ad) and the Wethersfield gravelly silt loams (WeD) to poorly drained soils such as Carlisle muck (Ca) and Udorthents group (Us, Uw). Soils in Rockland Lake State Park are generally easier to develop on than the other parks in the complex, given the steep slopes and rocky, shallow soils of other areas. As a result, much of this land has been used for recreational opportunities. For more detailed information please see Figure 7 – *Soils Map* and Diagram 1 *Rockland County Geographical Cross Section* below.

For more detailed information on Rockland County soils and geology, please visit the USDA Web site at <http://soildatamart.nrcs.usda.gov/Manuscripts/NY087/0/Rockland.pdf>.

Diagram 1 – Rockland County geographical cross section.

Rockland County, New York



Figure 1.—Relationship between soils, landscape position, and parent materials in Rockland County.

Source: United States Department of Agriculture – Soil Survey of Rockland County, 1990

Water

The primary water resources of the park complex are Rockland Lake and the Hudson River. Additionally, there are small unnamed streams and a variety of wetlands. These water resources contribute significantly to the park's biodiversity by providing essential habitat for many species and are important scenic resources as well. See Figure 8 – *Water Resources Map*.

Hudson River

The park complex falls within two watersheds. Rockland Lake falls within the Hackensack River watershed, Hook Mountain falls within both the Hackensack and the Hudson River watersheds, and Nyack Beach and Haverstraw Beach fall within the Hudson River watershed (USGS 2011).

There are over five miles of Hudson River shoreline adjacent to Hook Mountain, Nyack Beach, and Haverstraw Beach State Parks. Access to the river is provided through Haverstraw Beach and Nyack Beach State Parks and connected via the Hook Mountain/Nyack Beach Bikeway, providing significant public access to the riverfront and scenic vistas of the river. The vista from Hook Mountain provides a very scenic overlook where the river is over two miles across.

Water quality of the river adjacent to the park varies and contamination from local sources, such as sewage treatment plants and non-point source run-off throughout the region, impact the Hudson's water quality, resulting in the closure of the swimming beaches at Haverstraw Beach and Nyack Beach State Parks in 1951.

Due to the quality of the water, the New York State Department of Health has issued an advisory for fish consumption on the Hudson River. For more information on Hudson River advisories, please visit the following Web page

http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/.

For more information on the Hudson River and the conservation efforts to improve and protect its waters and wildlife habitat, please visit the following Web page

<http://www.dec.ny.gov/lands/5096.html>.

Rockland Lake

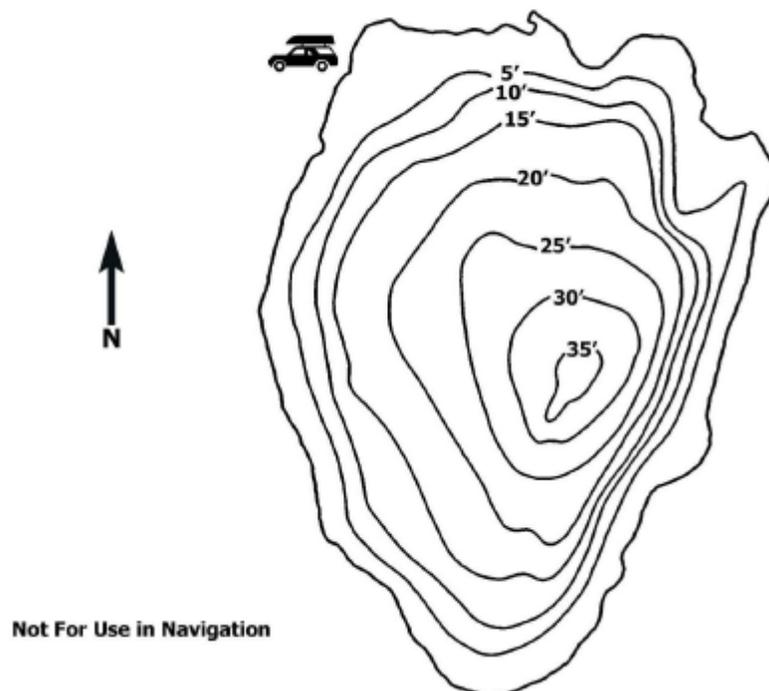
Rockland Lake is a 256-acre, shallow, naturally occurring water body and is one of the central recreational and aesthetic features of the park. It is primarily spring-fed, but does have at least one inlet stream on the southwest end. The lake's outlet is on the north end of the lake and the outlet stream flows through a wetland and under three park roads before leaving park property.

Water quality monitoring and aquatic vegetation and phytoplankton surveys have been conducted periodically in Rockland Lake by the Water Quality Unit within OPRHP's Environmental Management Bureau from 2000 to the present. Based on this monitoring, a Lake Study Report (Snow *et al.* 2012) has been prepared. The water quality monitoring results indicate that both the recreational use of the lake and the overall health of its ecosystem may be impaired. Abundant invasive aquatic plants, a decrease in water clarity and the presence of blue-green algae species are of concern due the adverse effects on aesthetics, boating and fishing. These characteristics can also have detrimental effects on the lake's dissolved oxygen levels and can present potential health hazards to people and animals that may come in contact with the water.

Roughly a third of the lake's watershed is developed in some way (C-CAP 2006). Approximately 11% is "open space" which includes the park development. The remaining development is mainly outside the park boundary and ranges from low intensity ((19.5%) medium intensity (.70%) and high intensity (.23%). Development in a watershed replaces natural landscapes with impervious surfaces such as roofs and pavement and prevents snowmelt and rainwater from permeating the soil, increasing runoff containing nutrients and pollutants. While the lake is primarily spring fed it is likely that runoff that feeds into the lake is influenced by nonpoint source pollution such as runoff from roads (oil, litter, salt), erosion or failing septic fields. Protection of the lake water quality from nonpoint sources, from construction of new park facilities and from park operations is important as the lake serves important ecosystem functions and is the aesthetic centerpiece of Rockland Lake State Park.

The quality of its water is a key factor in the park's recreation and natural resource stewardship. The water quality of Rockland Lake has remained in a highly productive (eutrophic) state for several decades. Unofficial reports suggest that the lake displayed more visual characteristics of a less productive lake in the 1960s, when it was described as having clear, weed-free waters. Algae blooms, sedimentation, presence of invasive aquatic plants, and increased aquatic macrophyte growth are reducing the quality of the lake as wildlife habitat and as a recreational and scenic resource. As a central feature of the park, there is a need to ensure that the lake's water quality is not only protected from further decline, but restored and improved.

Rockland Lake



Source: NYS DEC, Division of Fish, Wildlife and Marine Resources – Lake Map Series

Wetlands

Approximately two percent of the park complex is comprised of small, patchy wetlands. A Red maple-hardwood swamp is present to the north of Rockland Lake and several, smaller wetlands and vernal pools are scattered throughout the parks. Along the western shore of Rockland Lake, there is a deep emergent marsh that includes the majority of shoreline. See Figure 8 – *Water Resources Map* for more information.

Air

The Clean Air Act and Amendments of 1990 define a "non-attainment area" as a locality where air pollution levels persistently exceed National Ambient Air Quality Standards or that contribute to the ambient air quality in a nearby area that fails to meet standards. The park complex is located in the New York, New Jersey, Connecticut, and Long Island non-attainment area for failing to meet the National Ambient Air Quality Standard for air pollutants, specifically, ozone and fine particulates (EPA 2008).

For more information on New York's air quality standards and what is being done to improve them, please visit the following Web site <http://www.dec.ny.gov/chemical/42228.html>.

Climate

The climate for this portion of the Palisades Region is typical of the northeastern United States. The area has four distinct seasons, however, Hook Mountain receives additional winds due to its elevation and proximity to the Hudson River.

The average temperature at the parks is typical of the Mid-Hudson River Valley and the Palisades Region with a summertime average of between 80° and 85° F. Average temperatures in January range from 15° to 34° F. Rainfall is typical for this area and averages approximately 50" per year and snowfall totals average 26" per year. Prevailing winds for this region are generally from the south with an average prevailing wind speed of 11 mph. (USDA 1990, The Weather Channel 2011).

Natural Resources

The New York Natural Heritage Program (NHP) surveyed the park for rare species and ecological communities and a report of these findings was completed in 2001 (Evans 2001). In 2011, a supplemental survey was conducted of the park complex (Smith 2011) that included observations of the condition, quality, and threats to the natural communities identified in the earlier survey. The information below on Flora and Fauna is derived from these survey reports. Surveys of invasive species locations are ongoing.

Flora

In general, the flora in these forest communities is similar in composition to other large natural areas of the Hudson Highlands in the vicinity such as Bear Mountain, Harriman and Sterling Forest State Parks. The dominant tree species include a number of oaks (red oak and chestnut oak with lesser amounts of black oak and white oak), sugar maple, red maple, and eastern hemlock on the slopes and ravines. Common forest associates are beech, hickory, tulip poplar, and birch, with smaller areas of pitch pine and red cedar. Typical understory plants historically included flowering dogwood, witch hazel, maple-leaf viburnum, blueberries, a number of ferns, grasses and sedges, and wildflowers. The wetlands, open woodlands and grasslands also add to the diversity of flora within the park complex. However, although over 200 plant species were documented in the park complex from the Natural Heritage surveys in year 2000 (Evans et al. 2001), recent surveys found a dramatic reduction

of the native understory plants due to deer overbrowsing and encroachment of invasive plants (Smith 2011).

Invasive Plants

There are many invasive plant species within this park complex. Invasive plants can displace native species and threaten the biodiversity of natural communities. This phenomenon has been documented at the park, with the understory in some areas now dominated by non-native, invasive plants rather than the native flora (Smith 2011). Of greatest concern at the park complex is black swallow-wort, mile-a-minute weed, Japanese honeysuckle, and shrub honeysuckle because of their aggressive nature in displacing native plant communities. The invasive plants Kudzu (*Pueraria montana* var. *lobata*) and Caper Spurge (*Euphorbia lathyris*) had also been located in the parks. Fortunately Kudzu was eradicated in the single location where it was discovered.

Fauna

The Rockland Lake Complex supports a varied assemblage of fauna, including many species of resident and migratory mammals, birds, reptiles, amphibians, fish, and invertebrates. Common mammals of the parks include white-tailed deer (*Odocoileus virginianus*), Eastern coyote (*Canis latrans*), Eastern gray squirrel (*Sciurus carolinensis*), and Eastern chipmunk (*Tamias striatus*). Over 150 species of birds have been recorded in the parks, from migratory species like the broad-winged hawk (*Buteo platypterus*) that are seen soaring over Hook Mountain during fall migration, sometimes numbering in the thousands, to resident species like the yellow warbler (*Dendroica petechia*), to name a few. Reptiles and amphibians present in the parks include species such as the common snapping turtle (*Chelydra serpentina*) and painted turtle (*Chrysemys picta*) in Rockland Lake, to green frogs (*Rana clamitans*) and Eastern red-backed salamanders (*Plethodon cinereus*) found in park wetlands and woodlands. Fish in Rockland Lake include largemouth bass (*Micropterus salmoides*) and panfish. Numerous freshwater and saltwater species are found in the Hudson River along Nyack Beach, including the ever popular sportfish, the striped bass (*Morone saxatilis*).

Invasive Fauna

A survey of invasive fauna has not been conducted at the park complex, although several species have been identified either at the park complex or are known throughout the region. Invasive fauna found in the park include Mute Swan (*Cygnus olor*). For a list of potential and probable invasive insects and aquatic species please see Table 4 - *Known or Possible Invasive Fauna*.

Table 4 – Known and Possible Invasive Fauna

Type	Name	Presence
Birds	Mute Swan (<i>Cygnus olor</i>)	Present
Insects	Hemlock Woolly Adelgid (<i>Adelges tsugae</i>)	Likely
	Elongate Scale Insect (<i>Fiorinia externa</i>)	Likely
	Gypsy Moth (<i>Lymantria dispar</i>)	Likely
	Japanese beetle (<i>Popillia japonica</i>)	Likely
	Viburnum leaf beetle (<i>Pyrrhalta viburni</i>)	Likely
	Emerald Ash borer (<i>Agrillus planipennis</i>)	At risk
	Asian long-horned beetle (<i>Anoplophora glabripennis</i>)	At risk
Aquatic invasive species	Common Carp (<i>Cyprinus carpio</i>)	Likely
	Rusty Crayfish (<i>Orconectes rusticus</i>)	Likely
	Chinese Mitten Crab (<i>Eriocheir sinensis</i>)	Likely
	Asian clam (<i>Corbicula fluminea</i>)	Possible
	Zebra mussel (fresh water) (<i>Dreissena polymorpha</i>)	Possible
	Northern Snakehead fish (<i>Channa argus</i>)	At Risk
Forest floor	European earthworms (<i>Lumbricus</i> spp.)	Likely

Rare and Endangered Species

The park complex contains six rare plants species and one rare animal species. OPRHP will continue to work closely with NYNHP, NYS DEC and other partners to support monitoring, research and protection efforts on these species. In particular, a deer management strategy that is compatible with the other uses of the park is necessary in order to protect the rare plant populations from being extirpated from the site (Smith 2011).

Ecological Communities

As part of the NY Natural Heritage Program surveys, all of the natural community and cultural (man-made) cover types, such as lawn, have been mapped in this park complex (Evans et al. 2001; Figure 9 – Ecological Communities Map). The park complex is mostly forested, dominated by Appalachian oak-hickory forest, Chestnut-oak forest and Successional southern hardwoods. Appalachian oak-hickory forest generally occurs on mid to lower elevations, and Chestnut-oak forest on mid to upper slopes. Hemlock-northern hardwood forest and Oak-tulip tree forest areas are found in ravines, hillsides, and along stream corridors. Hook Mountain includes some unique natural

communities due to its geology and topography, including acidic talus slope woodland, cliff community, rocky summit grassland, and red cedar rocky summit. The park complex also contains areas of old field, a small conifer plantation, vernal pools, wetlands, the lake and the tidal river habitat. Developed areas mapped include roads, buildings, parking areas and maintained lawns, including the two golf courses. Significant Ecological Communities

A 175-acre Oak-tulip tree forest was documented on the slopes of Hook Mountain State Park and is considered to be a significant natural community type in the park complex (NHP 2001). The 2001 NHP report described this community as a mature forest dominated by sugar maple (*Acer saccharum*), red oak (*Quercus rubra*) and tulip tree (*Liriodendron tulipifera*) and supporting a rich herb layer. However, a decade later, NHP described this community as severely degraded due to severe deer over-browsing (Smith 2011). As a result, the lack of tree regeneration here will likely lead to this forest type disappearing over time. Additionally, the lack of native understory has left an opening for aggressive invasive plant species to spread. These impacts may lead to this forest community no longer being considered as significant, unless management to reverse these trends is taken quickly.

Significant Biodiversity Area

This portion of the Palisades is recognized as an important landscape corridor and has been identified by the NYS DEC as a *Significant Biodiversity Area*. This area of the state links New England to New Jersey, providing important habitats for regionally rare plant and animal species. Throughout the ongoing work of the NYS DEC Hudson River Estuary Program, these *Significant Biodiversity Areas* are part of a large scale conservation effort by a number of state and federal partners (NHP 2001).

For more information please visit the following Web sites.

Hudson River Estuary Program

<http://www.dec.ny.gov/lands/4920.html>

NYS Significant Biodiversity Areas

http://www.dec.ny.gov/docs/remediation_hudson_pdf/hrebcfII2.pdf

Palisades Significant Habitat Complex

This area has been identified by the United States Fish and Wildlife Service (USFWS) as the *Palisades Significant Habitat Complex*. The eastern portion of this habitat complex follows the west shore of the Hudson River from just south of the George Washington Bridge in Fort Lee, New Jersey, north along the Hook Mountain, Nyack Beach, and Haverstraw Beach State Parks to Haverstraw, NY.

Cultural Resources

Historic

The area was a prime location for summer habitation (Casey 2011) because of the proximity to both the Hudson River (or Muhheakantuck - river that flows two ways) and the large spring fed Rockland Lake, formally known as “Quashpeak”. For centuries, the Lenape Indians prospered here; however, as the Dutch began to settle this area, the Lenape began to move north and west looking for new land. Eventually, the traditional settlements that once existed in the area were completely

extinguished. For more information about the Lenape Indians, please visit the following website.
<http://www.lenapelifeways.org/lenape1.htm>

Dutch settlement in this area was slow primarily due to the rocky conditions encountered here. As time went on, more settlers came to the area wishing to escape the congestion downstream in what was once New Amsterdam (New York City). These early settlers called Hook Mountain "Verdrietige Hoogte/Hoek", which translates to "Tedious Point" (Casey 2011), so named in recognition of the shifting wind currents created by the location of the mountain, making passage through this area troublesome at times.

In 1780, a significant historic event occurred on the shoreline of the Hudson River at the area now known as Haverstraw Beach that had the potential to change early American history. On the evening of September 21, American General Benedict Arnold and the British spy John André exchanged the plans to the fort at West Point at this location. Arnold attempted to turn the fort over to the British Army for a bribe consisting of a commission as a Brigadier General in the British Army and a cash reward of £20,000 (about \$1.3M in 2009 dollars). For more information please visit the following website: http://en.wikipedia.org/wiki/Benedict_Arnold. A stone marker and historical plaque are located in Haverstraw Beach State Park identifying the place where Andre landed. This site, the location of an early town named Snedeker's Landing, is also known as the oldest shipyard in Rockland County. It built barges to ferry brick from the nearby brickyards in Haverstraw to New York City. Very few remnants from this era remain (TPPC 2011).

During the American Revolution, Rockland became an important crossroads and a vital link between the Northern and Southern colonies. Entire armies and vital supplies passed through Rockland on their way to war. There were several small battles in the county when British landing parties attempted to come ashore at Nyack and Haverstraw, only to be beaten back by the local militias. After seven years of war, Rockland County was in disrepair; having been ravaged by British troops, Tories and outlaws. Many homes had to be rebuilt and farms restored after the war (Casey 2011). For more information on Rockland County History, please visit the following Web site <http://www.co.rockland.ny.us/corner/history.htm>.

Rockland Lake became the site of a very important ice industry beginning in the 1830s. Ice was harvested from the spring-fed lake where it was then transported down the steep slope by way of rail on a cog or gravity-incline railway to Hudson River barges waiting 300' below. The lakes primary ice harvester, Knickerbocker Ice Company, employed up to 3,000 people who operated 13 steamboats and 80 barges for the harvesting and transportation of ice. After the advent of mechanical refrigeration in the 1920s, the need for natural ice dropped significantly. Ice harvesting on Rockland Lake ceased in 1924. During the demolition of an ice house in 1926, insulation caught fire, destroying the remaining ice industry structures as well as several other structures in the Village of Rockland Lake.

Also in the 1830s, in the Hook Mountain area, there were several quarries along the Hudson River from the Grandview area to Upper Nyack. These quarries mined the Palisades Sill to produce "trap rock." As quarrying technology improved throughout the late 1800s, dynamite and new large scale rock hauling and crushing equipment could excavate significantly higher quantities of rock. By 1900, the mining industry in this area was well underway, providing trap rock for the New York City metropolitan area streets, building foundations, and other construction projects. To protect the Palisades from additional quarrying, PIPC purchased several large tracts of land along the Palisades and developed parks. Many remnants of that era can be seen today throughout the park complex.

Haverstraw Beach State Park

In Dutch, "Haverstroo" means "oat straw," possibly suggested by the wild oats that grew at the waterfront beds of natural clay in the area (Casey 2011). This clay helped the Haverstraw area play a significant role in the brick industry, due to the clay content in the soil and the large quantity of wood available nearby, including wood from Hook Mountain that was needed to fire the furnaces. Some evidence from this time period remains in the area in the form of ruins and discarded bricks.

Nyack Beach State Park

Prior to the creation of Nyack Beach State Park, the land was used by the Manhattan Trap Rock Company. The large stone building seen on the site today was originally a very utilitarian concrete structure that housed steam engines to power large scale rock crushers. In 1936, the Work Projects Administration (WPA) rehabbed the powerhouse to a stone and heavy timber bath house. The bath house greatly improved swimming and picnicking opportunities along the Hudson River shoreline. As part of the redesign, the bathhouse also included a large ballroom with a large fireplace that was used for a variety of group functions over the years. Currently underutilized, the bathhouse is primarily used as a bathroom for trail users and picnickers. The park was declared a National Natural Landmark in April 1980 to recognize its portion of the Palisades Sill and nearby Hook Mountain.

Historic Structures

There are structures, ruins, and landscapes in the park that are historically significant and, as a result, are considered National Register of Historic Places Eligible (NRE). These include the former ice industry building foundations, the Rockland Lake park manager's house, Nyack Beach bathhouse, Nyack Beach office building, and the Nyack Beach Upper Plateau restroom. Other structures or sites are potentially eligible and include foundations of old River Park structures, the 1860 Hudson House, and other residential and park related structures and ruins located throughout the parks. Additional research is needed to determine if these structures/sites are eligible. See Figure 10 – *Cultural Resources Map*.

Archeological

Archeological documentation in the park is limited. Archeological sites surrounding the park indicate that there is both a pre-contact (Native American) and historic (Euro-American) component to the archaeological sites near the park. Environmental factors such as proximity to the Hudson River increase the potential for archeological sensitivity in the park and surrounding area.

Scenic Resources

Vistas

Expansive scenic vistas of the Hudson River Valley and beyond are provided at various points on Hook Mountain and Nyack Beach State Parks. These ridge-top vistas have been a significant part of the region through both the pre-contact and the historic periods and are even more pronounced due to the quarry operations of the 19th century. The scenic characteristics of Hook Mountain from the Hudson River Valley and surrounding communities have been well documented. Artists of all types have used the mountain as a backdrop including the "Hudson River School", a mid-19th century American art movement embodied by a group of landscape painters. Vistas of the Hudson River can also be found along the shoreline on the Hudson River Bikeway. Additionally, many scenic areas can be found surrounding Rockland Lake that provide significant scenic vistas of the lake, flora and surrounding topography.

Tappan Zee Scenic District

Areas within Nyack's waterfront boundary have been designated under Article 49 of the Environmental Conservation Law as part of the Tappan Zee Scenic District. Local governments within the jurisdiction of the Scenic District are encouraged to prepare a management plan for the included lands and waters. The Tappan Zee Scenic District begins at the New York-New Jersey state line and continues north along the west shore of the Hudson River to include the portion of Hook Mountain State Park south of Rockland Lake (Nyack LWRP).

Recreational Resources/Activities

The park complex is heavily used for its diverse range of both passive and active recreational resources. It offers a variety of recreational opportunities including picnicking, hiking, bicycling, fishing, court and field games, golfing, geocaching, swimming and cross-country skiing. Each of its recreational opportunities is described in more detail below.

Swimming

Rockland Lake has a large, 24,140 square foot swimming pool with diving boards and is located to the south of Rockland Lake. This pool receives significant usage throughout the summer months with between 100,000 and 136,000 people using it yearly. A smaller pool is also available for young children. A second, currently unused pool is located adjacent to the park office. This pool has been closed since 2008, due to infrastructure needs.

Golfing

Rockland Lake has two 18-hole golf courses designed by David. W. Gordon, ASGCA and opened in 1969. The first is the Championship Course that provides tight, tree-lined fairways and rolling terrain. The second is the par-3 Executive Course that offers wider fairways and is designed for the average recreational golfer. The Executive Course features 2,780 yards of golf from the longest tees for a par of 54. The course rating is 45.0 and it has a slope rating of 80. The Championship Course features 6,864 yards of golf from the longest tees for a par of 72. The course rating is 72.3 and it has a slope rating of 126. Both courses are open from March until late November.

Tennis

Rockland Lake has six tennis courts located adjacent to the Championship Golf Course parking lot that are open from March to late November.

Field Games

A wide variety of field games are played at Rockland Lake including, but not limited to, softball, baseball, soccer, cricket, flag football, kickball, ultimate Frisbee, Gallic football, lacrosse, rugby, and volleyball. The designated fields for these activities are regularly used and the demand for these types of group activities at the park continues to grow.

Skiing

Cross country skiing is allowed on all trails and on the Championship Golf Course, weather permitting.

Fishing

Fishing is allowed in the Hudson River from Nyack Beach State Park and in Rockland Lake. Due to the current water quality, Rockland Lake's fishery is under the New York State Department of Health's General Health Advisory. Patrons should eat no more than one meal of fish (approximately one half pound) from the lake per week.

For more information on NYS advisories, please visit the following Web site.

http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/background.htm#why

Wildlife Viewing

Birding is a popular activity at the park, particularly at Rockland Lake, on the Hook Mountain ridge top and along the Hudson River shoreline. Hook Mountain is the site of an annual hawk watch event. Patrons also visit the park to view wildlife commonly found in the region.

Geocaching

Geocaching is allowed in the park by permit. Patrons wishing to place a geocache in the park must contact the park manager

Boating

The park complex has two car top boat launches. The first is located on the west side of Rockland Lake. The other car top boat launch is located on the Hudson River at Nyack Beach State Park. Each park provides parking and access to the river. Patrons must provide their own boat at these sites. A PIPC boating permit is required for access to Rockland Lake. Permits can be purchased at any PIPC facility.

Day use areas

Picnic Areas

Rockland Lake has five picnic areas located throughout the park and individual sites located along pathways. The total quantity of picnic sites through the entire park complex is approximately 400. Within each of the large, designated picnic areas there are open areas that are used for "pick-up games," informal activities, and a wide variety of organized field games. Comfort stations are provided at each picnic area.

Nyack Beach has two small picnic areas each with a nearby comfort station. The first is adjacent to the upper parking lot and the second is near the lower lot on the Hudson River and The River Trail.

Picnic Pavilions

The park does not currently have a designated picnic pavilion available for patrons. During inclement weather, however, the large covered entrance area by the park office is available for patron use.

Trails

Trails are available for use year-round, providing opportunities for walking, hiking, running, bicycling, cross country running, cross country skiing, snowshoeing, nature viewing, and education. There are several undesignated trails in the park. The designated trails include the following:

Rockland Lake Trail

The Rockland Lake Trail is a three mile, 10' wide paved trail circling Rockland Lake. It is regularly used by patrons for walking, bicycling, running, roller-blading, and dog walking. This trail connects many of the park facilities including the picnic areas, the park office, the bathhouse, and the nature center. The trail is plowed of snow in the winter making it available for use year-round.

Hudson River Trail//River Trail

This almost five mile trail provides continuous scenic views of the Hudson River. Trailhead parking is provided at both Haverstraw Beach and Nyack Beach allowing bicyclists, walkers, and dog walkers access from either side of Hook Mountain. This approximately 10' wide trail, constructed of crusher fines, begins at sea level and follows the shore of the river. For a distance of approximately 1.5 miles from Nyack Beach State Park, the Hudson River Trail//River Trail is considered accessible by patrons with disabilities. Patrons wishing to snowshoe or cross country ski may do so on this trail.

Hudson River Water Trail

The Hudson River Water Trail currently has 94 designated kayak/canoe access points along the Hudson River, one of which is at Nyack Beach State Park. Access points are provided every 10 miles or less along both sides of the river to provide linkages to various overnight accommodations, secure boat storage options, eateries, day use attractions, historic sites, and natural resources such as tidal marshes.

Long Path

The Long Path is a 347-mile hiking trail that passes through over six miles of the park complex on its way from New Jersey to Thacher State Park in upstate New York. From the ridge portion of this trail, one can see spectacular views of the Hudson River Valley.

Infrastructure

Utilities

The park water supply is served by United Water, the Rockland County municipal water supplier. Wells provide water to the park manager's residence, two restrooms on the Championship Golf Course, and water to replenish the Executive Golf irrigation pond. The Championship Golf Course is irrigated using lake water that is pumped to a detention pond. From the pond, numerous pumps and valves throughout the courses distribute the water. The Championship Course has a series of isolation valves to provide irrigation to portions of the course as required. The Executive Course pumps from a well to the detention pond and does not have isolation valves, irrigating the entire course at one time. Many times, only portions of the course need watering creating a situation where the course is either too dry or too wet.

The park wastewater system is connected to the local municipal treatment system. The two Championship golf course restrooms, the park manager's house, and the assistant golf course manager's house are treated by septic systems. Three other homes (# 5, 25, and 33 on the *Building Inventory Map*) that are presently vacant also have septic systems.

Telephone service is provided by Verizon through copper wire. Due to this substandard material, frequent service outages take place in the park. The electric service to the park is supplied by Orange and Rockland Utilities.

The park has several petroleum bulk storage tanks and is a permitted facility that currently meets all regulations. The maintenance area contains two above ground tanks - a 1,000 gallon biodiesel B5 Bio-Clear tank and a 4,000-gallon tank for unleaded fuel storage. Each golf course has a bulk storage tank for fueling golf carts. For heating purposes, propane tanks are located at the Championship Golf Course, Fishing Station, and Restroom #3. Propane is also used as cooking fuel in the north concessions building. Natural gas is provided to cook, heat, and provide hot water at the south concession building, the Venture Academy, at a park residence (#31), and the vacant homes in the park (# 5, 25, and 33). Number 2 fuel oil is used to heat the north maintenance shop, the Executive Golf Course Clubhouse, and the park manager’s house.

Roads, Bridges and Tunnels

The park maintains approximately 8.3 miles of roadway throughout the park complex. The Rockland County Department of Transportation owns and maintains Rockland Lake Road and its associated infrastructure. Rockland Lake Road is 4.3 miles long and the primary roadway through the park. A quarter mile long railroad tunnel, owned and maintained by ConRail, runs through Hook Mountain on the northern portion of the park complex.

Parking Areas

To accommodate the high volume of patrons, there are several parking areas located throughout the park complex. These parking areas range widely in size and condition, but generally, resurfacing is needed throughout the park. See Table 3 – Parking Fields.

Table 3 – Parking Fields

Parking Field	Condition	Material	Quantity
Parking Field 1	Poor	Asphalt	2600
Parking Field 2	Poor	Asphalt	220
Parking Field 3	Poor	Asphalt	200
Parking Field 4	Poor	Asphalt	1000
Parking Field 5	Poor	Asphalt	150
Parking Field 6	Good	Asphalt	98
Landing Road Lot	Poor	Dirt/gravel	12
Executive Golf Course	Acceptable	Asphalt	169
Championship Golf Course	Acceptable	Asphalt	188
Nyack Beach Lower	Poor	Asphalt	100
Nyack Beach Upper	Poor	Dirt/gravel	40
Haverstraw Beach	Poor	Dirt/gravel	8
Parking Capacity Total			<u>4,785</u>

Culverts

There are many metal culverts located around Rockland Lake that were installed in the early 1960s. These culverts have since deteriorated and all are in need of replacement. Culvert pipes located in the two golf courses are also showing signs of deterioration and may need replacement.

Accessibility (ADA)

Accessibility is analyzed and improved during the design phase of projects. An assessment has not been conducted for the entire park complex. The Rockland Lake Trail and the Hudson River Bikeway are both considered ADA accessible pathways.

Park Operations

General maintenance throughout the park such as mowing, trash collection, restroom cleaning, and care for the golf course is conducted from both the North and South maintenance areas. Management of the park is based from the park office located on the north end of the lake and is where most administrative actions are conducted. The location of the park office in proximity to the south pool area causes many operational and management challenges during the main operating season. Management of the golf courses is based out of the Championship Golf Course Clubhouse with the North Maintenance Area coordinating the maintenance of the Championship Course and the South Maintenance Area coordinating the Executive Course maintenance. In season, the park hires up to 90 additional seasonal staff to assist in park maintenance, traffic control and pool operation which requires significant staff time. The parks educational programming is coordinated from the Rockland Lake Nature Center and Trailside Museum at Bear Mountain State Park.

Hours of Operation

The Park Complex - The park complex is a day use park and open daily year-round during daylight hours. The Rockland Lake swimming pool is open on weekends and holidays, Memorial Day weekend through Labor Day, from 11:00 AM until 6:45 PM. On weekdays, from June to August, the pool is open from 10:00 AM until 5:45 PM.

Golf Courses and Tennis Courts - The golf courses and tennis courts are available for use starting in mid-April. The Executive Course and the Tennis Courts are open until late November, while the Championship Course is open until the first Sunday in December, weather permitting.

Nature Center - The nature center opens in late June and is available to visitors until late August.

Maintenance

North Maintenance Area

The park maintenance area is accessed from Championship Road and serves all general park related maintenance operations. The maintenance building is used to maintain equipment, store regularly used supplies and tools, and serves as the office and lunch room for maintenance staff. A portion of this facility provides storage for golf course equipment. The mechanic's station is located in this building and provides service and repair for most vehicles for the park and all small equipment maintenance and repair for High Tor, Nyack Beach, Tallman Mountain, and Rockland Lake State Parks, including both the Executive and Championship Golf Courses. An asphalt parking lot is provided and is used to store park's vehicles and equipment and provides access to fueling tanks.

Salt and sand storage for winter roadway application is stored outside beneath tarps in the former sewage treatment plant area adjacent to the North Maintenance Area.

South Maintenance Area

The South Maintenance Area is located to the east of Rockland Lake Road and Parking Lot 3. A portion of this building includes a heated shop for maintenance projects. The unheated cold storage bays provide limited space for both storage of park supplies and equipment and space to work on projects out of the weather. The area outside the building is used for a mix of golf course equipment storage and employee parking.

Buildings

The park complex has 62 buildings located throughout, ranging from fully operational to dilapidated. The park buildings that are located in Rockland Lake proper were constructed between 1964 and 1965 and are in need of rehabilitation. The Championship Golf Course clubhouse (#36 - Figure 11) was replaced in 1999 and a park residence (#31 – Figure 11) was renovated in 2011. Both of these structures meet current operational needs. Many other building ruins are located along the Hudson River Bikeway and are identified as a “Historic Structure” and are not included in this list. A detailed evaluation of the historic resources present in the park has not been conducted. See Figure 11 – *Building Inventory Map* for more information on existing structures within the park.

Solid Waste Management and Recycling Programs

Solid waste is collected from the park by park staff and transported to the municipal landfill for disposal. Recycling is promoted throughout the park by educational flyers and posters. Recycling bins for cans and bottles are provided at specific points for public use. The park office recycles paper products, aluminum, plastic, and glass. The park maintenance shops recycle scrap metal and used oils.

Fees

A vehicle use fee (VUF) is collected from vehicles entering Rockland Lake and Nyack Beach State Parks on weekends from mid-April to mid-June, weather dependent. VUF's are collected daily beginning in mid-June and lasting until Labor Day. From Labor Day until the last weekend in October, VUF's are collected only on weekends.

Picnic and PIPC boating permits are available from April to November. Special use fees are also collected for those desiring to use recreational fields and golf facilities for activities/events, golfing, to remove firewood, or rent boats. The general policies guiding the implementation and collection of fees are established by OPRHP/PIPC. For more information on specific use fees, please visit the following Web page <http://nysparks.com/parks/81/fees-rates.aspx>.

A VUF is not collected at Haverstraw Beach. Patrons may park in this small unpaved parking lot for free year-round.

Environmental Education and Interpretation

Rockland Lake Nature Center, which opened in 1965, provided a wide variety of educational opportunities for patrons. Due to budgetary constraints, park staff removed the animal exhibits and closed the Center in the early 1990s. With renewed funding, the park reopened the area in 2005 with new natural and cultural exhibits about the park's resources. The nature center is supervised by

Trailside Museum and Zoo at Bear Mountain State Park and staffed with Student Conservation Association and AmeriCorps interns.

The Nature Center is located on the north side of the lake and is available for use from late June until late August. The butterfly garden outside the entrance to the nature center was developed and is maintained by volunteers from the Rockland County Master Gardeners and the Cornell Cooperative Extension. A boardwalk and nature trail through a forested wetland was located adjacent to the Nature Center, however, it has been closed due to deteriorating conditions.

Emergency Plans and Services

Park Safety, Security and Emergency Response

The park falls under the jurisdiction of the NYS Park Police - Palisades Region. In the event of an incident, the NYS Park Police are notified by the park office staff, dispatching the necessary emergency responders to the incident. During the summer months, Park Police are based out of Rockland Lake to improve safety and security in the park during its busiest periods. The park is also served by the local municipality police department of Clarkstown and the Rockland County Sheriff's Department.

Two Emergency Action Plans (EAP) are maintained on site to direct and assist staff in numerous emergency situations. A park wide EAP is utilized during emergencies throughout the park and an additional EAP is used for emergencies taking place at the pools. In the event of an evacuation of the park, it is coordinated by the NYS Park Police. Park staff assist the NYS Park Police where directed and follow the EAP protocol.

Special Events/Permits

There are numerous special events that take place in the park. Some of the events include the following:

Knickerbocker Ice Festival is an annual event that is hosted by permit at the park during the winter months. It features ice carving, local arts and crafts, history lectures, entertainment, a food court showcasing lower Hudson Valley restaurants, and activities for children including igloo building and snow bowling.

Hawk Watch – Birders from around the State come to The Park Complex to view the fall hawk migration down the Hudson Valley. The primary location for viewing is along the Hook Mountain ridge top. For more information on the Hawk Watch, please visit the following webpage - <http://www.battaly.com/hook/>.

Several distance running races are held in the park including the following: Sri Chinmoy Marathon Women's Distance Festival 5K and the Toga Duathlon.

Permits are needed in the park to participate in various activities. These activities include the following; boating, collecting firewood, placing geocaches and league recreational activities.

Chapter 2 – Analysis and Alternatives

Introduction

This chapter contains the alternatives resulting from discussions on natural and cultural resource protection, recreation resource development and operations proposed for the park. Each proposal is analyzed using the inventory information, park goals, and other factors. The alternatives developed are a result of analysis gathered on the various resources throughout the park. Findings from this analysis are used in identifying preferred alternatives for each of the resource categories. The status quo, alternatives, considerations and preferred alternative for individual issues are described in narrative form. A complete description of the plan that results from the preferred alternatives is found in the master plan document.

Recreation Resource Development and Management

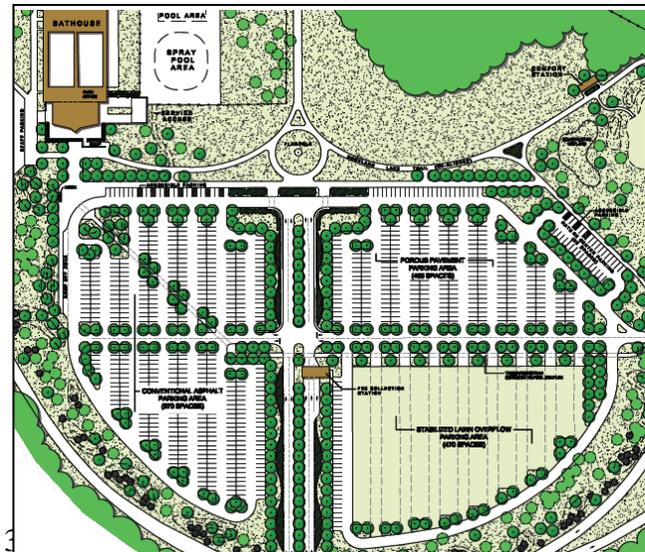
The recreation resource development and management alternatives primarily focus on the recreation use areas of the park along with support infrastructure such as adjacent parking areas. These areas currently constitute approximately 25 percent of the park complex. Area specific information can be found below.

North Swimming Pool/Bathhouse Area

Background for Analysis: Swimming is a very popular activity at Rockland Lake State Park. The North pool and bathhouse were taken out of service in 2008 due to ongoing maintenance issues and operational costs. The park office is located in the bathhouse building and continues to serve as the park administration headquarters. The Program Room and public restrooms are located in the bathhouse and remain available for use.

- Alternative 1 - Status Quo – The pool and bathhouse remain closed. The park office, restrooms and Program Room remain open. The parking area remains in disrepair.
- Alternative 2 – Rehabilitation of the pool and bathhouse – The pool is rehabilitated and is easily monitored by park administration improving safety and security. The bathhouse will be redesigned to provide improved services and convenience to park patrons. As part of this redesign, the Program Room and Park Office will be updated. To improve security and increase enforcement of park policies, the Park Police will have an office in the building. Employee access to the park office will be constructed adjacent to driveway access. Parking lot 1 (the North Lot) will be rehabilitated. For additional information see Figure 12 – *North Pool Area Plan* and the Vehicular Access and Control – Parking Lots section of this document.

Preferred Alternative: 2 - The North pool, bathhouse and parking lot will be rehabilitated to improve the patron experience, safety and security of its users, and to reduce maintenance of operating a deteriorating pool facility. See Figure 12 for more information.

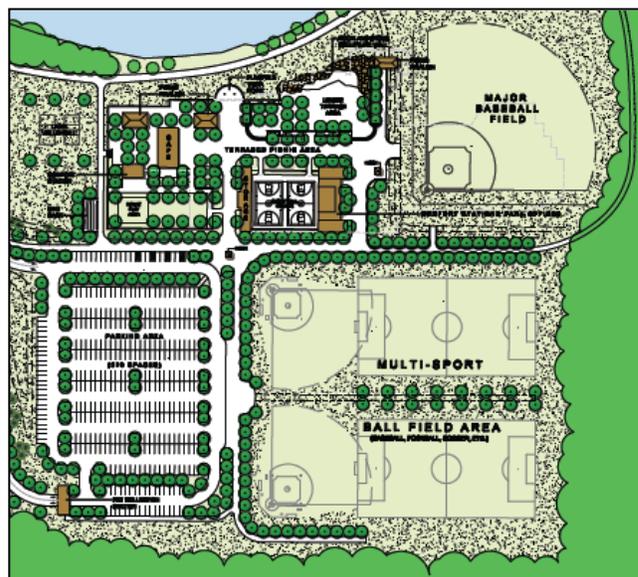


South Swimming Pool/Bathhouse Area

Background for Analysis: The South pool and bathhouse are functioning, however, they are in disrepair and need of significant maintenance. Operational costs are extensive due to the ongoing maintenance issues. On busy summer days, the pool and parking lot are filled to capacity. The parking lot is also used for the adjacent recreational fields, which are very popular and regularly used for a wide variety of field sports. A significant investment of funds is required to keep the South pool operational.

- Alternative 1 - Status Quo – The pool continues to deteriorate and is potentially closed for substantial rehabilitation in the future. Recreational field users continue to use fields and parking lot congestion remains.
- Alternative 2 – Rehabilitate pool – The pool is rehabilitated and the area remains a functioning pool area and bathhouse. The parking lot is rehabilitated and drainage is improved.
- Alternative 3 – Develop a recreational complex – The entire south pool area, parking lot and recreational field area is reconfigured into a recreational complex. Regional staff will investigate opportunities to reuse the pool as a stormwater filtration basin. The pool may be converted to a sub-surface water detention area which will filter contaminants before naturally percolating through drainage holes to the lake or be reused to irrigate the recreational fields as needed. A recreational field will be constructed above the former pool. Parking is shifted to improve recreational field layout and parking lot access. Additional stacking room is provided on an improved entrance roadway to reduce or eliminate impacts to traffic flow on Route 9W. The former bathhouse is converted to a facility which meets the needs of field users and other day users. The concession stand is reopened, three pavilions are constructed, bathrooms are improved and the area is landscaped.

Preferred Alternative: 3 - The area will be developed into a court and field recreational complex. The pool will soon need significant funding to maintain yearly usage. The location of the pool at the south side of the lake causes several operational issues for park administration and reduces the efficiency of response during potential emergencies. To fill the need for pool activities in the park, the North Pool and bathhouse will be rehabilitated. See Figure 13 – *South Recreational Area Plan* for more information.



Picnicking

Background for Analysis: There are several areas to picnic throughout the park complex. Rockland Lake State Park has five picnic areas around the lake. On busy days, the approximately 400 picnic tables located in these areas are used by patrons. When the picnic tables are occupied, patrons use blankets or towels on grassy open areas. Nyack Beach has two small picnic areas each with a nearby comfort station. The first is adjacent to

the upper parking lot and the second is near the lower lot on the Hudson River and The River Trail. In the 1960's, there were several picnic pavilions located in the park; however, due to disrepair they have all been removed through the years. Demand for this type of group picnicking activity is high in the area.

- Alternative 1 – Status Quo – Picnicking is maintained at its current level. Group shelters are not provided.
- Alternative 2 – Group picnicking is expanded. – A group shelter is constructed near Parking Lot 3. The shelter and associated parking lot would be placed on the reservation system for group rental. Three smaller picnic shelters are constructed in the South Recreational Area for first come/first serve usage. See Figure 13 for more information.
- Alternative 3 – Plant shade trees in the Parking Lot 5 picnic area. – Shade trees planted in this area will improve patron satisfaction in this area.

Preferred Alternatives: 2 and 3 – To reinstate a use that was once present in the park, a reservable covered shelter will be constructed adjacent to Parking lot 3. The parking lot will be rented out as part of the shelter rental program and available for public use when the shelter is not reserved. To enhance the patron experience, additional shade trees will be planted in key locations in the picnic area around Parking Lot 5.

Boating

Background for Analysis: Personal boats are allowed on Rockland Lake with the purchase of a PIPC boating permit. Patrons access the lake at Parking Lot 6 via the car-top boat launch area. Patrons use Nyack Beach to launch canoes and kayaks in the Hudson River. Motor boats are not allowed in the lake. In previous years, patrons have also rented row boats from the concessionaire located adjacent to Parking Lot 6.

- Alternative 1 - Status Quo – Patrons are allowed to use personal boats on Rockland Lake by permit. A boat rental concession is not present in the park. Kayaks and canoes are launched on the Hudson River from Nyack Beach State Park.
- Alternative 2 – Hire a concessionaire for boat rental – A boat rental concession was available from Parking Lot 6. OPRHP/PIPC staff has been working to reinstate a viable concession contract for boat rental without success.

Preferred Alternative: 1 – Rental boats will not be provided at Rockland Lake. Upon the development of a concession contract, park staff will consider reinstating boat rental opportunities on Rockland Lake. Access to the Hudson River will remain.

Fishing

Background for Analysis: Fishing is a popular activity and is allowed in Rockland Lake and along the shoreline of the Hudson River with appropriate fishing licenses. Patrons currently park in Parking Lot 6 year round for fishing. Other parking lots are available for use throughout the main operating season. Public comments recommended the fishing pier be redeveloped into a handicap accessible pier and that Parking Lot 3 be opened year round for public fishing access to the lake.

- Alternative 1 - Status Quo – Fishing is allowed in Rockland Lake and the Hudson River by permit.
- Alternative 2 – Access to fishing in Rockland Lake is encouraged from Parking Lot 4 and The South Recreation Area. The depth of the water is greater on the south side of the lake providing improved fishing opportunities.

Preferred Alternative: 1 and 2 – Fishing will continue to be allowed in Rockland Lake and the Hudson River by permit. After the development of the South Recreational Area, a small accessible fishing pier will be constructed in this area to enhance fishing opportunities. Fishing access will remain unchanged for the Hudson River.

Trails (running, hiking, bicycling, rollerblading)

Background for Analysis: There are several trails located throughout the park complex. The multi-use trails include the 3 mile Rockland Lake Bicycle Trail which is a heavily used, 10’ wide paved trail surrounding Rockland Lake that includes walking, bicycling, rollerblading and running. This trail is generally in good condition, however, there are areas that are in need of maintenance and repair. Due to the high use of this trail, user conflicts tend to occur. Impacts to reduce user impact should be considered.

The Nyack/Haverstraw River Trail is a 5 mile, 8’ wide, natural surface trail for biking, hiking and dog walking. The River Trail is relatively flat and until damage suffered from Hurricane Sandy in 2012, was generally in good condition from Rockland Lake to Nyack Beach. Areas of the trail impacted by Hurricane Sandy are presently being rehabilitated and will be available for use soon after the completion of this plan.

As the trail nears Haverstraw Beach from Rockland Lake, the topography changes and erosion from Hurricanes Lee, Irene and Sandy have impacted several portions of the trail. Fencing has been placed at points of erosion to warn patrons of steep slopes and reduce the risk of accidents.

The Long Path travels along Hook Mountain between Nyack Beach and Haverstraw Beach State Parks. Several points traverse steep slopes which are eroding or are located in moist areas. These areas are in need of improvements. Many patrons access the cliffs of Hook Mountain on the Long Path to view wildlife, in particular birds which nest in the area or migrate along the Hudson River

In addition to bicycling on trails, road biking throughout the park has become increasingly popular. Several popular bicycle routes use park roadways and should be considered during development of facilities.

- Alternative 1 - Status Quo - Running, walking, and bicycling are allowed on the Rockland Lake Trail and The River Trail. Hiking is allowed on the Long Path. Rollerblading is allowed on the Rockland Lake Trail and dog walking is allowed on the River Trail.
- Alternative 2 –Allow dog walking on other trails in the park.
- Alternative 3 – Construct mountain bike/hiking trails – Mountain biking trails are constructed on Hook Mountain.

Preferred Alternative: 1 – Current trail related activities will continue. Dog walking will remain only on the River Trail. Due to the linear nature of the park, the topography, and the developed areas, the park complex was deemed an inadequate area for single-track mountain

biking trails. Mountain bikes will continue to be allowed on the River Trail and the Rockland Lake Trail.

Landing Road Trail

Background for Analysis: Access to the Long Path and the River Trail is limited. Several small undesignated parking areas are used around the periphery of the park and along Landing Road. On busy days, patrons park all along both Landing Road and Collier Road to access the trails, impacting local residents. The public input process identified the need for additional access to these trails. Pedestrian access to the River Trail on Landing Road is allowed, however, the slope of the roadway is relatively steep (13% grade) and difficult for many cyclists.

- Alternative 1 Status Quo – Patrons wishing to access the River Trail or the Long Path park in undesignated parking areas.
- Alternative 2 – A paved multi-use pathway is constructed from Parking Lot 2 and the Rockland Lake Trail to the River Trail

Preferred Alternative: 2 – A paved trail will be constructed connecting the River Trail to the Rockland Lake Trail and the Long Path. See Figure 14 - *Landing Road Trail and Cultural Interpretation Center* and the *Master Plan Map* for more information and conceptual layout.

Golfing

See “Infrastructure Development” below.

Tennis

Background for Analysis: Rockland Lake has six tennis courts located adjacent to the Championship Golf Course parking lot that are open from March to late November. These courts are underutilized, in need of repair, and infrequently used.

- Alternative 1 - Status Quo – The tennis courts remain in place.
- Alternative 2 - Discontinue tennis in the park and reuse the concrete pads for a covered storage area.

Preferred Alternative: 2 - To make the most effective use of the area, the tennis courts will be eliminated and the area adaptively reused to provide additional storage for maintenance equipment and supplies in a structure that will adequately screen the storage area from public view.

Playgrounds

Background for Analysis: Playgrounds are not present in the park. Several surrounding local parks have playgrounds.

- Alternative 1 - Status Quo - Playgrounds are not located in the park complex.
- Alternative 2 - Construct playgrounds - A large playground is constructed east of the North Bathhouse. A smaller, nature-themed playground is constructed near the Nature Center. A smaller playground is planned for the proposed rehabilitated South recreation area.

Preferred Alternative: 2 – Playgrounds will be constructed in the park to enhance play opportunities for children. The playground adjacent to the North Bathhouse will be substantial, include shade trees and be designed to fit into the landscape. The playground located adjacent to the Nature Center will be smaller in size and focus on nature and interpretation. A smaller playground will be constructed as part of the proposed rehabilitated South recreation area. See Figure 13 for more information.

Skateboarding/Rollerblading/Freestyle Biking

Background for Analysis: If the South Pool is removed from service, opportunities are present to construct a large skate park using the existing infrastructure as a base for construction of standard skate park features.

- Alternative 1 - Status Quo – A skate park does not exist in the park.
- Alternative 2 – Construct a skate park - A skate park is created for skateboards, roller blades and bicycles using the former South Pool. This concrete, Olympic-size pool would be converted to provide a sizable park for multiple users.

Preferred Alternative: 1 – A skate park will not be constructed in the park. While the adaptive reuse of the South Pool as a skate park would provide opportunities for skate boarders, freestyle bikers and rollerbladers, the demand for recreational fields and supporting facilities is greater in the region.

Natural Resource Protection Strategies and Management

Natural resource protection and management strategies are in place throughout the park complex to protect the ecological communities and enhance biodiversity. Adaptive management strategies are needed to manage forest health, potential impacts to the lake, grassland habitat, fish and wildlife, and invasive species. Management strategies must also consider potential future impacts to the park complex, including different user groups, changing environmental conditions, and the possible introduction of invasive species like the emerald ash borer and Asian long-horned beetle.

Bird Conservation Area (BCA)

Background for Analysis: The BCA Program aims to integrate bird conservation into agency planning, management and research projects, within the context of the agency mission. The New York State Bird Conservation Area Program is described under Article 11, Title 20 of the Environmental Conservation Law (ECL). The creation of a BCA does not preclude existing or future land use proposals, nor does it prohibit park development or operational needs. In addition to recognizing the importance of bird conservation within the planning process, BCAs can create heightened public awareness of the site's important bird community, as well as opportunities for bird-related education, research and conservation. The creation of a BCA also includes the preparation of a Management Guidance Summary which provides guidance relative to bird conservation not only for management purposes, but also for operations, research, education and outreach (DEC 2011).

There is currently no BCA within the Rockland Lake Complex. In order to qualify for creation of a BCA, a site must meet at least one of nine criteria outlined in the ECL. OPRHP staff evaluated available data on the bird populations and habitat within the parks to determine if any of these criteria were met. Sources of this data include the NYS Breeding Bird Atlas 1980-1985 & 2000-

2005, Rockland Audubon Society Christmas Bird Counts, Hook Mountain Important Bird Area raptor observations, Deed's Birds of Rockland County, and information provided by Alan Wells and Carol Weiss. Following data evaluation, OPRHP staff determined that the Rockland Lake Complex meets the following six BCA criteria:

1) Waterfowl Concentration Site

Rockland Lake regularly supports 1,000 to 1,500 waterfowl of multiple species, including northern shoveler (*Anas clypeata*), gadwall (*Anas strepera*), and American coot (*Fulica americana*) in winter during open water conditions and, on occasion, likely supports up to 2,000 waterfowl.

2) Migratory Bird Concentration Area

Fifty-five (55) species of neo-tropical songbirds have been documented in the parks.

3) Diverse Species Concentration Site

Thirty-four (34) species of birds have been reported as breeding within the parks; Thirty-nine (39) forest dwelling neotropical migrants have been observed within the parks, including 14 that have been reported as breeding.

4) Individual Species Concentration Site

Numerous raptors of multiple species pass over Hook Mountain on migration, including broad-winged hawks that have numbered nearly 15,000 in a single day.

5) Species at Risk Site

The parks provide habitat for the NYS Endangered peregrine falcon (*Falco peregrinus*), two species that are listed as NYS Threatened (pied-billed grebe – *Podilymbus podiceps* and bald eagle – *Haliaeetus leucocephalus*), one NYS Species of Special Concern (Cooper's hawk – *Accipiter cooperii*), and one rare or declining species (ruddy duck – *Oxyura jamaicensis*).

6) Bird Research Site

Long term raptor migration monitoring is ongoing at Hook Mountain Important Bird Area and has taken place since 1971.

Based on the evaluation of the data and the findings, the entire area of Rockland Lake Complex, excluding developed areas (i.e., maintained golf course areas, large parking lots and building complexes) is eligible for consideration as a designated BCA.

- Alternative 1 – Status Quo – The park complex is not designated as a BCA, bird management strategies continue to be implemented. There would not be any statewide recognition of the park and its importance to bird populations.
- Alternative 2 – Portions of the park complex that meet the BCA criteria would be designated. There are six different criteria within the BCA law that have been met in areas of the park complex.

Preferred Alternative: 2 - This alternative selects the most appropriate areas for a BCA, which are generally the undeveloped portions of the park complex. Designation will provide statewide recognition of the importance of this area for bird habitat. 1700 acres of the park will be designated as a BCA. See Figure 15 – Bird Conservation Area

Invasive Species Management

Background for Analysis: Invasive plant species are present throughout the park complex and the species of greatest concern are black swallow-wort and mile-a-minute. Invasive insects such as the emerald ash borer and Asian long-horned beetle, while not currently documented in the parks, are also of concern. Control and management of invasive species is critical to the health and biodiversity of the various ecosystems they impact. Invasive species management takes place through the coordinated efforts of Park staff with volunteer groups where specific impacted areas are targeted for removal.

- Alternative 1 – Status quo – Some limited management of invasives species has been conducted at the park complex.
- Alternative 2 – Increase invasive species control - Invasive species are a significant threat to the park’s biodiversity. Monitoring and control of new or recent infestations through Early Detection/Rapid Response will continue. A simple methodology for surveying and reporting invasive species will be provided through training to park staff. Best Management Practices (BMPs) to prevent accidental introduction of invasive species through construction, operations and other activities will be implemented. Information on BMPs is available from a variety of sources. Due to the extent of invasive species at these parks, control efforts will need to be prioritized to focus first on areas around high quality habitats and rare species populations. Control efforts will include restoration with native species. Monitoring for invasive forest pests will also continue. Aquatic invasive species signage will be developed for the boat launch areas to educate and inform boaters not to spread aquatic invasive species. Boaters will be encouraged to clean their boats when leaving Rockland Lake and the Hudson River and to place vegetation in a disposal station to be installed at each of the launch areas. Reporting, monitoring, and control of invasive species will utilize current coordinated mapping efforts through imapinvasives.org.

Preferred Alternative: 2 – This alternative will focus limited resources on the management of the invasive species of greatest concern through early detection, rapid response and the protection of the most sensitive species and habitats. Training will be provided that includes BMPs, surveying, mapping, and reporting. Signage and education will also be provided.

Information on BMPs is available from a variety of sources. One example for invasive species is from the New York State Department of Transportation (2011) and may be found at https://www.dot.ny.gov/divisions/engineering/environmental-analysis/repository/InvasiveSpeciesBMPs_Transp-UtilityROWs.rtf.

Although intended for road and right-of-way management, the principles are applicable in most situations. State Parks will develop a simplified BMP that is feasible for state parklands.

Shoreline Protection

Background for Analysis: Several small streams flow into and out of the park complex. During heavy rainfall, portions of these streams have become eroded and caused significant impacts. Patron access adjacent to several areas has reduced vegetation and is also contributing to erosion. Erosion control measures have been implemented in several portions of the park complex.

The Hudson River water quality is tested by the NYS DEC and is subject to State water quality regulations. Impacts to the river are primarily from upstream sources. Minor bank erosion takes

place along the river's edge, particularly during high flood events. The park complex does not significantly impact the water quality of the Hudson River.

- Alternative 1 – Status Quo – Portions of Rockland Lake and the Hudson River shorelines continue to erode from wave action and patron use.
- Alternative 2 – Protect shoreline – Eroded shoreline areas and areas opened up to enhance scenic vistas surrounding Rockland Lake will be planted with native plants to prevent erosion and protect lake water quality. The seawall at Nyack Beach State Park is in need of repair and will be rehabilitated to protect the Hudson River shoreline while continuing to allow patrons access. As funding becomes available, additional shoreline areas along the River Trail, leading up to Haverstraw, will be repaired as needed to prevent further trail erosion.

Preferred Alternative: 2 – The shoreline of the Hudson River and Rockland Lake will be protected to reduce erosional forces. Areas surrounding Rockland Lake will use vegetation such as trees, shrubbery or grass where appropriate. The Hudson River seawall at Nyack Beach State Park will be rehabilitated to protect the bank from further deterioration. Other shoreline areas along the river trail leading up to the Haverstraw will be repaired as needed to protect further trail erosion as funding becomes available.

Rockland Lake

Background for Analysis: Water quality testing has been underway at Rockland Lake and its inlet tributaries. A water quality report has been developed by OPRHP which identifies impacts to the lake and possible causes of these impacts. While the lake is said to be spring fed, outside influences from nonpoint source pollution has impacted the present water quality. An assessment of culvert placement has been conducted by OPRHP staff. Several of these culverts increase the velocity of stormwater and are contributing to erosion at their outlets.

- Alternative 1 – Status Quo - Continue periodic lake water quality monitoring
- Alternative 2 – Implement additional management strategies to further protect the lake and improve water quality.

Preferred Alternative: 2 - The quality of Rockland Lake is vitally important to the recreation and natural resources of the park and therefore additional management effort is needed to prevent further eutrophication of the lake and improve water quality. Further monitoring and aquatic plant surveys are already underway and a preliminary assessment of culverts emptying into the lake has been conducted. The following are additional strategies that will be implemented:

- Collaborate with state and local agencies on stormwater management and non-point source pollution within the Rockland Lake watershed. Consideration will be given to forming and advisory working group on the lake's management.
- Conduct additional water quality monitoring of the tributaries and stormwater inputs to the lake and source tracking to determine levels and sources of bacteria.
- Expand on the culvert assessment and investigate the use of predictive models to determine the amount of stormwater runoff within the watershed based on development projections and climate

change. This can inform culvert replacement type and sizing for volume, peak flow, and wildlife connectivity and also inform alternative filtration options.

- Incorporate the use of on-site filtration techniques such as permeable pavement, stream daylighting, and bioretention to reduce water quality impacts on the lake wherever possible. Funding will be sought for standard and innovative green stormwater management projects.
- Provide an educational kiosk and other educational materials or programs on cultural eutrophication. Post warning signs about blue green algae as needed. Continue to manage Canada geese to keep the population low at the park. Ensure park operations are using best management practices to prevent pollution to the lake and that park wastewater systems are properly maintained.

Wetlands

The single wetland in the park complex is located at the north end of Rockland Lake. This wetland provides protection for the lake's outlet stream and also provides interpretive opportunities for the adjacent nature center. Fencing has been installed to keep deer from entering the wetland and to manage and direct patron access. The wetland boardwalk has been closed, due to disrepair.

- Alternative 1 – Status Quo – The boardwalk that is in the wetland and adjacent to the nature center continues to deteriorate and is unusable. The area remains fenced and undisturbed by park patrons.
- Alternative 2 – Boardwalk and nature trail reconstruction – To expand the current educational and interpretive opportunities in the wetland, the former boardwalk and nature trail are reconstructed in place to educate patrons of the importance of wetlands.

Preferred Alternative: 2 – The wetland will continue to provide protection for the lake's outlet stream. The former boardwalk will be replaced in its former location as a means to educate patrons about wetland and lake habitat. The construction of the boardwalk and trail will remain in its former location and be constructed in a manner that includes minimal impacts to the area, including not impacting drainage.

Scenic Vista Management

Background for Analysis: The most significant scenic vistas in the park include the views from Hook Mountain of the Hudson River Valley and beyond, the vistas surrounding Rockland Lake and the shoreline views along the Hudson River. Vista points along Hook Mountain have remained relatively unchanged throughout the recent past, due primarily to the shallow bedrock. Because of their high visibility from the river and scenic nature, these areas should remain undeveloped and vistas left unmanaged.

Previous vistas surrounding Rockland Lake have closed in due to vegetation growth. However, several of these have been managed in recent years to enhance lakeside views and access. Many other small forested scenic resources are present throughout the park and should be protected. Current vista locations throughout the park complex are relatively abundant and the need for additional viewpoints is not necessary. All planning and design elements should consider the scenic nature of the park.

Alternative 1 - Status Quo – Existing scenic vistas remain in their present condition or are left to grow in with vegetation.

- Alternative 2 – Scenic vistas are improved – The vegetation surrounding Rockland Lake is managed to improve or maintain significant scenic vistas in areas of high patron usage. Vegetative screening using native trees, shrubs, low-maintenance perennials, and naturalistic berming of soil will improve or eliminate views of Parking Lot 1 and 4 by screening it from Rockland Lake Road. Current scenic vistas located along the Hudson River will be maintained and/or improved.

Preferred Alternative: 2 – Vegetation will be managed to maintain or improve scenic vista points surrounding Rockland Lake and along the Hudson River where appropriate. Parking Lots 1 and 4 will be improved and include significant vegetation and berming to screen these areas from view. Vista management will incorporate protection of natural and cultural resources. See Figure 12 for additional information.

Wildlife Resources

OPRHP follows a “passive management” approach, allowing natural processes to maintain wildlife populations. However, there are situations when a more active management approach is necessary to protect the health and safety of park staff and patrons, protect species at risk, protect and enhance biodiversity, prevent damage to park buildings or infrastructure, and to provide recreational opportunities. In such cases, park staff will use an integrated management approach to accomplish the established goals.

Canada Geese

Background for Analysis: Canada geese populations have been increasing throughout New York State in the past several decades. The buildup of Canada goose fecal material is both a health concern and aesthetic issue within state parks. From 1995 to 2005, there were approximately 300 Canada geese at Rockland Lake during the summer. Since 2005, several management techniques have been undertaken including relocation, hazing using a border collie contractor and treating Canada goose nests by oiling the eggs to prevent hatching. Since 2011, the park manager has assumed responsibility for all management activities. The current Canada goose population is between 70 and 100 geese which is considered an acceptable level. Signage is posted throughout the park discouraging the feeding of geese.

- Alternative 1 - Status Quo – The park manager will continue to treat nests and haze the geese. Canada goose numbers in the park will continue to be monitored.
- Alternative 2 – The services of a professional Canada goose management company will be contracted out to haze Canada geese in the park using Border collies.
- Alternative 3 – Reduce the population of Canada geese in the park by conducting a round up during the summer molt.

Preferred Alternative: 1 - The recommendation is to continue the current park management activities to reduce Canada goose impacts and monitor the Canada goose population in the park. Should the Canada goose population increase to an unacceptable level, the park will consider contracting with a private company for hazing services using border collies.

Mute Swans

Background for Analysis: While mute swans are considered attractive wildlife and many people enjoy the viewing opportunities they provide, they are considered an invasive species in New York. Currently there are eight (8) mute swans in Rockland Lake. Mute swans can have harmful impacts to submerged aquatic vegetation by consuming and uprooting plant beds (Atlantic Flyway Council 2003). The loss of this vegetation in waterfowl breeding and wintering areas has been linked to a decline in some duck species (Atlantic Flyway Council 2003). Mute swans are very territorial during the breeding season and can kill or displace other waterfowl that attempt to nest in their territories (Atlantic Flyway Council 2003). Mute swans have also been reported to attack canoes, kayaks, and other small boats when the water crafts approach too close to a swan nest or their cygnets (young swan). The impacts that mute swans are having on the aquatic vegetation and native waterfowl at Rockland Lake are currently unknown. In consultation with the NYS DEC, the park manager currently searches for mute swan nests and treats the eggs with corn oil to prevent the population from growing.

- Alternative 1 – Status quo - The park manager will continue to search for mute swan nests and treat the eggs. The numbers of swans in the park will be monitored.
- Alternative 2 – The park manager will no longer treat swan nests. The mute swan population will likely grow and have a greater impact on the aquatic habitats and native waterfowl of the park.
- Alternative 3 – Conduct monitoring of aquatic vegetation and nesting waterfowl to determine if mute swans are having an impact on the biodiversity of the park.
- Alternative 4 – Conduct a lethal removal of mute swans from the park. The removal of mute swans will protect aquatic vegetation and native waterfowl. Park patrons would no longer be able to observe mute swans at the park.
- **Preferred Alternative:** 1 and 3 – The recommendation is to continue with current park management activities of treating nests to prevent the population from growing. The current population at the park is low and the impacts on aquatic vegetation and native waterfowl do not appear to be significant. Monitoring of aquatic vegetation and waterfowl nesting should be initiated in order to document any negative impacts caused by mute swans.

White-tailed Deer

Background for Analysis: Overbrowsing by deer is considered to be the greatest threat to the biodiversity of the park complex (Smith 2011). As a result, the forest communities within the park complex currently exhibit greatly reduced shrub and herbaceous layers, while also containing an abundance of invasive plant species. Additionally, tree regeneration is lacking and the rare plant populations in the park have decreased, jeopardizing the long-term viability of these species (Smith 2011). Public feeding of deer along roadways has been noted in the park complex and this may result in an increased risk of deer/vehicle collisions. Feeding deer is also in violation of NYS Environmental Conservation Law. The park complex is in suburban area surrounded by residential homes and, currently, does not allow hunting nor have a management plan to address deer impacts to the park.

- Alternative 1 - Status quo - No management of deer populations will take place. Deer populations will continue to impact rare plants and forest biodiversity and health. This may result in the loss of some rare plant species.
- Alternative 2 – Fencing at key locations to exclude deer. Rare plant populations will be protected from deer browse. This protection will be limited to the size of the fenced area and will need continued maintenance. The fencing will not be able to address the larger issue of impacts to forest biodiversity and forest health.
- Alternative 3 – Opening the park complex to public, archery only hunting. Deer populations will be reduced over time. Rare plant populations may still be experience browsing pressures until the population is reduced. Hunting may create conflicts with other users in the park and with neighboring landowners.
- Alternative 4 – Use sharpshooters to reduce the deer population. The deer population will be quickly reduced; however, without a means to maintain low deer numbers the population will recover in a few years and it will be necessary to use sharpshooters again. This approach requires coordination with local municipalities and a permit from the NY DEC.
- Alternative 5 – Use of fertility control (immunocontraception) to manage the population. This method is only allowed as part of an experimental permit from the NY DEC . The costs for this type of management has been estimated to range from \$500 to \$3,000 per deer treated (NY DEC 2011). If implemented, the deer population will remain high for several years resulting in continued impacts to rare plants and forest resources. Some rare plant species may be lost. According to The Management Plan for White-tailed Deer in NYS 2012-2016 (NY DEC, 2011) “this strategy has not proven to be a viable, stand-alone option for managing free-ranging deer populations.”
- Alternative 6 – Creation of a working group involving OPRHP, the Department of Environmental Conservation, neighboring property owners and other interested stakeholders to develop a management plan that addresses both the deer impacts and neighboring property owners concerns.

Preferred Alternative: Alternatives 2 and 6 – The recommendation is to use fencing to protect rare plant species in the short term and the development of a management plan to reduce the deer population in the long term.

Turkey Vultures and Black Vultures

Background for Analysis: Numerous turkey vultures and black vultures are attracted to the picnic areas at Rockland Lake during the evening and early morning hours. The vultures feed on garbage left overnight in trash receptacles, knocking them over and spilling the garbage on the grounds. Besides creating additional work to clean up the garbage, the vulture activity may present a health risk to the public when the vultures also perch on picnic tables. If allowed to continue, the vultures may learn to associate plastic bags with food items and begin to damage personal property left in similar bags.

- Alternative 1- Status Quo - Management strategies are not in place. Park staff continue to pick up litter spread by turkey vultures and black vultures regularly.

- Alternative 2 - Replace current trash receptacles with wildlife proof receptacles.
- Alternative 3 - Change garbage pickup schedule so less garbage is left in receptacles overnight.

Preferred Alternative: 2 and 3 Changes to garbage receptacles and management should reduce the current issues.

Cultural Resource Protection Strategies and Management

Archaeological Resources

Any new construction that will result in ground disturbance will require a site specific survey and approval from the State Historic Preservation Office (SHPO). Some specific categorical exclusions from this requirement are listed in Appendix A - *Cultural Resource Categorical Exclusions*.

Historic Resources

Along the Hudson River at the base of Hook Mountain and Nyack Beach State Parks are the remnants of many recreational features which comprised a very sizable park complex. Several of these remnants are visible along trails while others are secluded in the woods along the river's edge. Most of these remnants consist of dilapidated walls, foundations or landforms while others are more sizable structures such as deteriorated stone buildings. The park manager's residence, located at the end of Landing Road on a main pedestrian corridor, is the only structure from this era which remains intact within the park complex and is in need of rehabilitation.

The main park structures constructed with the creation of the park in the 1960's are National Register Eligible (NRE) structures. If renovations are made to these structures, SHPO will need to be contacted to determine if the changes to the structure significantly impact the overall character of the structure.

Staff members from the Field Services Bureau of OPRHP visited the park as part of this master plan process. A committee was developed to assess the cultural resources and develop strategies to protect, stabilize and interpret them. These visits were conducted in order to assess the condition and historic significance of park structures. By age of the Park and it's structure's National Register Eligibility, any plan for rehabilitation and/or stabilization or demolition, the Field Services Bureau of OPRHP would be consulted and make final approval to these projects.

The planning team felt that specific structures or sites needed more analysis and consideration of alternatives. These structures are identified below:

Nyack Bathhouse

Background for Analysis: The bathhouse is used primarily for its restroom facilities. It is also reserved for certain large group activities; however, it has been underutilized since it was last used as a bathhouse for swimming.

- Alternative 1 – Status Quo – The bathhouse is rented for large group activities throughout the year. Impacts to the public use area are generally limited to the parking lot; however, large group parking is located on the upper terrace. A portion of the roof is in need of repair and the restrooms need rehabilitation.

- Alternative 2 – Determine a suitable adaptive reuse for the bathhouse – Alternate uses, such as a cultural resource center, bicycle shop/rental or snack shop, were considered. The number of parking spaces is a significant limiting factor for this area. Additional amenities to this area will increase its use and congestion.

Preferred Alternative: 1 and 2 – The status quo use will remain. The restrooms will be improved. The rental of the building will remain. However, staff will remain open to alternate uses for this structure, barring any significant impact to the structure or patrons wishing to use the parking lot.

River Park Structures and Sites

Background for Analysis: The former River Park structures located along the Hudson River are now ruins. These structures are all National Register Eligible.

- Alternative 1 – Status Quo – The structures continue to deteriorate.
- Alternative 2 – A plan is developed to protect, preserve or remove structures and sites – Field Services Bureau (FSB) and regional staff coordinate to develop a priorities list to address these structures.
- Alternative 3 – Structures are removed.

Preferred Alternative: 2 The River Park structures are considered National Register Eligible (NRE) and should be preserved and protected when feasible. Regional staff and the Field Services Bureau (FSB) will coordinate to develop a priorities list to protect/stabilize structures which can be safely and cost effectively protected. If certain structures in high use zones are beyond stabilization, OPRHP/PIPC will take any necessary steps to make them safe. As part of this plan, interpretation will be developed for the structures.

Hudson House

Background for Analysis: The Hudson House was an inholding and purchased by OPRHP/PIPC. The house is in disrepair and requires significant renovations. The back portion of the house has collapsed.

- Alternative 1 – Status Quo –Funding is not available for the rehabilitation of this structure and it is slated for demolition.
- Alternative 2 – Rehabilitate the structure – If adequate outside funding and expertise were available, the structure could be rehabilitated with substantial effort.

Preferred Alternative: 1 and 2 – If outside funding and expertise is made available for this structure soon, rehabilitation will be considered. Otherwise, the structure will be removed. OPRHP/PIPC will consider the salvage of usable architectural components by contract before demolition.

Historic Scenic Resources

Background for Analysis: Several areas in the park complex are part of the historical fabric of the area. Many of these areas require maintenance to protect and preserve them.

- Alternative 1 – Status Quo – Scenic vistas along the rocky ridge top of the Hudson River Valley remain. Vistas surrounding Rockland Lake are managed to provide access and views of the lake. Views of the Hudson River along the River Trail are maintained.
- Alternative 2 – Views are expanded along Hook Mountain – To enhance the existing vistas, vegetation is removed at key points along the ridge top.

Preferred Alternative: 1 - The existing vistas along the Hook Mountain ridge top and surrounding Rockland Lake will be maintained. If historical records or plans are found which indicate specific landscape/scenic intentions previously constructed, those plans may be reimplemented to enhance scenery and rehabilitate a historic landscape. The open, scenic vistas were deemed suitable on Hook Mountain. Any development surrounding Rockland Lake will consider the scenic nature of the area into the design elements.

Infrastructure Development

Park Office Area

Background for Analysis: The park office was constructed in 1967 and has seen minimal improvements over time. Since that time, park administrative responsibilities have changed. Rockland Lake State Park was initially managed by two park offices. Currently, the entire park complex is managed from the park office in the North Bathhouse building. To improve the administrative function of the park, the office needs to be updated to current standards. The public restroom and employee break room are also in need of improvements. Plans should be developed for this area.

- Alternative 1 – Status Quo – The Park Office remains undersized for the current park operations and has not had improvements since it was constructed in 1967.
- Alternative 2 – Improve the Park Office – Improvements are made to the Park Office including an expansion to include additional administrative space, a staff break room, additional public interface space and upgrading the telecommunications and electric to meet current standards.
- Alternative 3 – Construct a Park Police Office – An office will be developed in the North Bathhouse building, adjacent to the Park Office for Park Police staff.

Preferred Alternative: 2 and 3 – Plans will be developed to improve the Park Office and better meet the needs of staff and patrons. A Park Police office will be constructed adjacent to the Park Office to increase patron security throughout the park complex.

Maintenance Areas

Background for Analysis: The North and South Maintenance Areas are in need of additional covered, unheated storage space for equipment and material storage. Due to lack of available space, equipment and material are stored outside and as a result, deteriorate quicker and require additional maintenance. The heated portion of the North maintenance shop is used year-round and is too small

for current park operations, particularly in the winter. To improve the efficiency of the workspace, an expansion of the heated room should be considered. If the heated portion of the north maintenance shop is expanded, off season maintenance operations can be consolidated into this area.

- Alternative 1 – Status Quo – Maintenance operations are based out of both the North and South maintenance areas year-round. Heated shop space is insufficient for winter maintenance activities. Restrooms are not available for use at the South Maintenance area. Covered, secure storage space is limited at both maintenance areas and does not adequately protect equipment and materials. Maintenance infrastructure will remain.
- Alternative –2 – Improve the North and South Maintenance Areas – Additional covered storage space is constructed at each existing maintenance area to protect equipment and materials from the elements and theft. Winter operations are improved and consolidated to the North Maintenance Area where an expansion to the heated shop will be constructed. A covered storage area for maintenance equipment and golf carts is constructed on the former tennis courts.

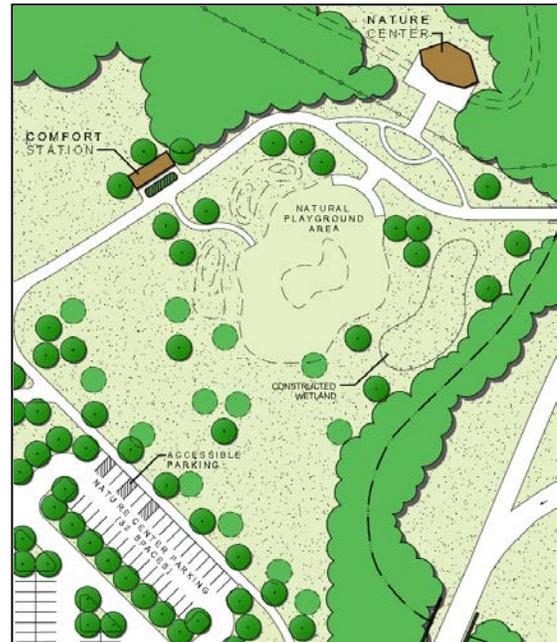
Preferred Alternative: 2 – The maintenance areas will be improved. The existing heated workshop area will be expanded to improve year round operation in the North Maintenance Area. A small unheated secure storage area will be constructed to store mowers. Unheated secure storage for maintenance equipment will also be expanded in the tennis court area reusing the concrete pad. To consolidate and improve operations, the South Maintenance Area will only be actively used during the main operating season. Outside of the main operating season, this building will be used for unheated cold storage. The small heated carpentry workshop area will be relocated to the North Maintenance. Secure, covered storage space will also be constructed reusing the concrete tennis courts. This storage area will be designed in a manner to aesthetically screen the area from patron view.

Nature Center

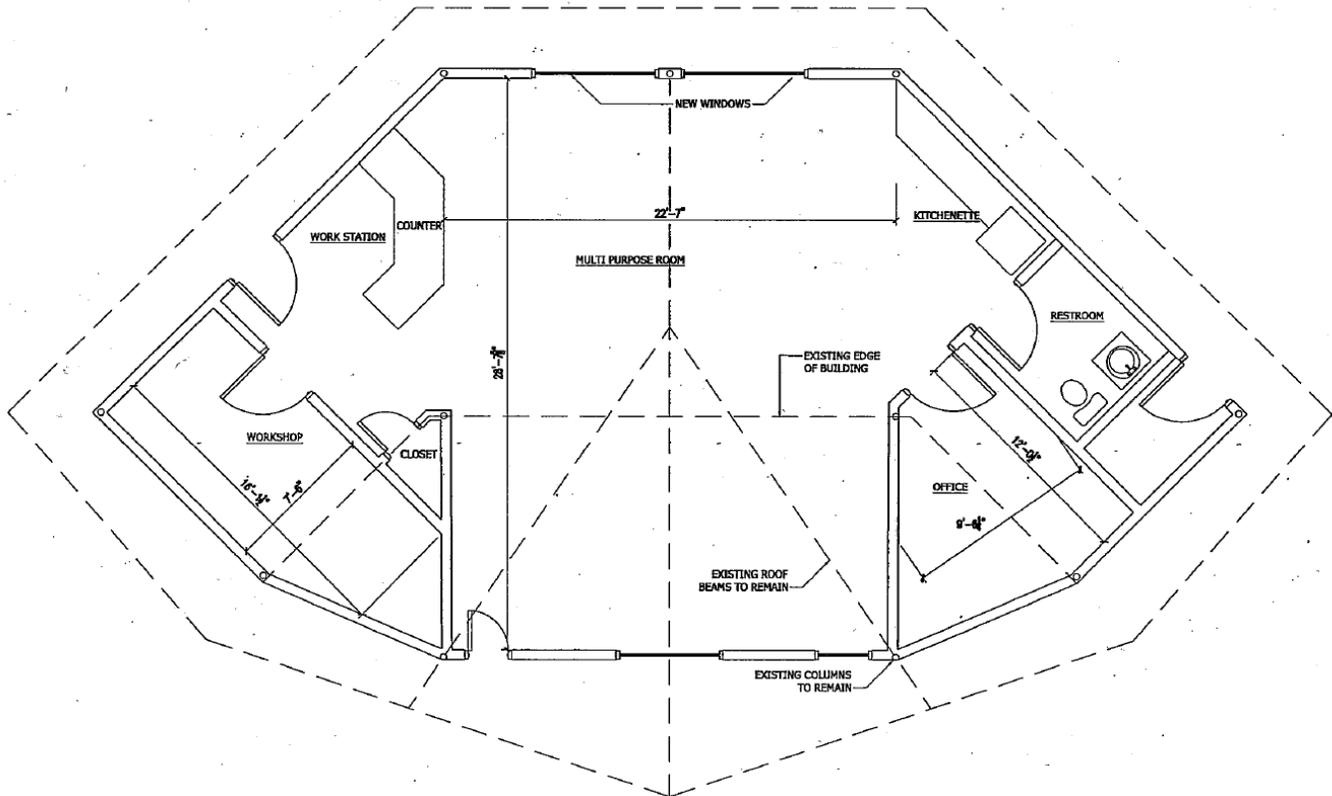
Background for Analysis: The Nature Center is a single story structure located on the north side of Rockland Lake. It was constructed in 1965 and at the time was open much of the year. Due to budgetary issues, it was closed in the early 1990's. In 2005, it was reopened for limited seasonal use using static exhibits which feature the natural and cultural history of the park. Presently, the Nature Center is managed and maintained using a mix of park staff and volunteer labor. It is a very popular facility in the park and is in need of updating and expansion for both exhibit and classroom space. The boardwalk and nature trail located behind the Nature Center have fallen into disrepair and were also closed in the 1990's. Several public comments recommended improvements to the nature center and the reconstruction of the boardwalk.

- Alternative 1 – Status Quo – The Nature Center is open during the main operating season and managed and maintained using park staff and volunteer labor. Exhibit space is improved as funding allows. The boardwalk and nature trail remain off limits to patrons and are not improved.
- Alternative 2 – Improve Nature Center – The Nature Center is expanded to include additional classroom space and exhibit space. The boardwalk and nature trail are improved and reopened. Public/Private partnerships will be considered as a means to fund and maintain this area.

Preferred Alternative: 2 – The Nature Center provides an excellent opportunity to educate patrons of the parks resources and will be improved to include additional exhibit space. Regional staff will develop detailed plans to expand the Nature Center to include classroom/multi-purpose space for use by schools and other groups. Detailed plans will be developed for these improvements soon after the completion of the master plan. The boardwalk and nature trail will also be reconstructed in place to enhance educational opportunities. A small bioretention basin will be constructed to provide natural filtration of storm water runoff from the adjacent parking field and nature interpretation opportunities for the nature center.



A new comfort station will be constructed adjacent to the nature center in a presently mowed location, which will serve Rockland Lake Trail users, Nature Center users and playground users. This new comfort station will be available for use year round, replacing the winter function of the Parking Lot 6 comfort station. See Figure 12 of the EIS for more information. The nature center will be open during the standard season. See conceptual layout below.



EXISTING NATURE CENTER - PROPOSED EXPANDED PLAN

SCALE: 1/4" = 1'-0"

Park Manager's Residence

Background for Analysis: The park manager's residence is located in a heavily used recreational area and, as a result, the manager does not have any personal time. Patrons regularly request to use the restroom and telephone or look in the windows. This structure is the last of the River Park structures not in ruins. The retaining wall behind the house is in need of repair.

- Alternative 1 – Status Quo – The park manager continues to live in the former River Park structure along a high traffic trail. The back retaining wall of this house continues to deteriorate.
- Alternative 2 – Relocate the Park Manager's residency. Regional staff will investigate opportunities to relocate the park manager to a suitable location which provides privacy. The present location is located in the middle of a very heavily used area. The existing Park Manager's house would provide an ideal occupancy change to a Cultural Interpretation Center and comfort station due to its proximity to the River Trail.

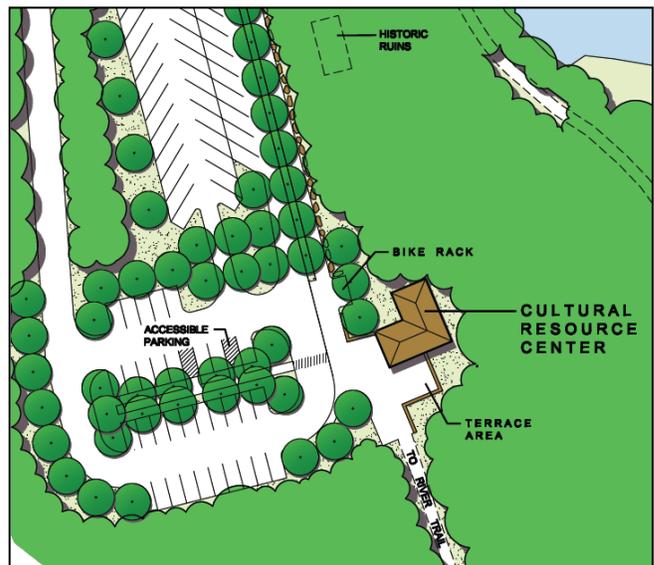
Preferred Alternative: 2 - Regional staff will investigate opportunities to relocate the park manager's residency. Upon relocation, the present structure will be rehabilitated and converted to a Cultural Interpretation Center and comfort station.

Cultural Interpretation Center

Background for Analysis: To educate patron's on the significant history of the area, a cultural interpretation center could be constructed in one of the underutilized structures at the park. The area must have suitable parking and be in an area frequently utilized by park patrons.

- Alternative 1 – Status Quo – A Cultural Interpretation Center is not present in the park complex. The Program Room and the Nyack Beach house have several historic photos, however, these rooms are only available for group activities and are not regularly available to patrons.
- Alternative 2 – Develop a Cultural Interpretation Center – The former park manager's residence will be converted to a Cultural Interpretation Center. The main focus of this structure will be local and regional history pertaining to historic events and activities which have taken place on the park complex land.

Preferred Alternative: 2 – As part of the relocation of the park manager's residence, plans will be developed to convert this structure into a space suitable for cultural resource interpretation. Upon the relocation of the park manager, plans will be implemented to rehabilitate and convert this historic structure.



Executive and Championship Golf Courses

Background for Analysis: The current irrigation system is outdated and inefficient. Significant maintenance and resources are required to keep this system operating. Portions of the golf courses

require improved drainage. The Championship Clubhouse has recently been replaced. The Executive Clubhouse is outdated and in need of updating or replacement.

- Alternative 1 – Status Quo – The courses continue to use an insufficient and high maintenance irrigation system. The irrigation pond capacities are insufficient for the current need. Both clubhouses remain in their current condition and capacities.
- Alternative 2 – Irrigation systems are improved – A new irrigation system is installed in each course to improve and direct water more efficiently and effectively. Unlike the current system, a new irrigation system will allow water to be directed to only areas in need of irrigation. Both irrigation ponds will be dredged to increase their holding capacity. Drainage improvements will take place as needed during installation of the irrigation system. The clubhouses remain in their general current condition and capacities.
- Alternative 3 – Replace the Executive Course Clubhouse – To improve the patron experience and bring the existing clubhouse up to current standards it will be replaced.

Preferred Alternative: 2 - The irrigation system will be improved using current design standards to improve irrigation efficiency and reduce the labor and maintenance associated with the current system. Drainage improvements will also be made to the greens, tees and fairways to improve playing conditions. Both irrigation ponds will be dredged. Course conditions will improve to be consistent with the present standards of play. The Executive Course Clubhouse will remain and receive minor improvements as funding allows.

Utilities

Background for Analysis: The utilities throughout the park complex are in need of updating and/or repair. Most were installed in the 1960's and have deteriorated.

Wastewater

- Alternative 1 – Status Quo - Wastewater systems throughout the park continue to meet State regulations. Most facilities are connected to the municipal wastewater system; however, others are connected to septic systems. A single septic holding tank is located adjacent to Parking Field 1 and is regularly infiltrated by groundwater causing the pump to run frequently. This septic holding tank is in need of maintenance to reduce this infiltration issue.
- Alternative 2 – Eliminate groundwater infiltration – The septic tank adjacent to Parking Field 1 is fixed to eliminate groundwater infiltration and reduce energy consumption due to regular pumping of water to the municipal system.
- Alternative 3 – Connect septic systems to the municipal wastewater system.

Preferred Alternative: 2 and 3 – OPRHP staff will investigate the rehabilitation or replacement of the septic holding tank. If existing septic systems fail to work properly, OPRHP/PIPC staff will investigate methods to connect to the municipal wastewater system.

Electric

- Alternative 1 – Status Quo - The electric system throughout the park remains substandard. Regular power outages occur for extended lengths of time throughout the year.

- Alternative 2 – Improve Electric System – The electric system is upgraded to current standards and where feasible, buried to reduce impact to the power lines during wind or ice storms.

Preferred Alternative: 2 - To better meet the needs of park staff and patrons, the electric system will be upgraded to meet current standards. OPRHP/PIPC will provide outreach to the local electrical supply company for this improvement.

Telecommunications

- Alternative 1 – Status Quo – The park complex continues to use substandard telecommunications impacting park operations and communication with staff and patrons.
- Alternative 2 – Improve telecommunications system – Park staff will coordinate with telecommunication providers to bring the system up to current standards.

Preferred Alternative: 2 – The system will be updated, improving park operations and communication with patrons and staff.

Vehicular Entrance Control/Access

North Entrance

Background for Analysis: The north entrance to the park is in need of improvements to assist patrons who are unfamiliar with the park with way finding and access to the park facilities.

- Alternative 1 – Status Quo – Entrance to Rockland State Park remains in its current configuration and directional signage remains unchanged.
- Alternative 2 – The North entrance to Rockland State Park is reconfigured to provide additional stacking room and an improved traffic pattern.
- Alternative 3 – Directional signage is improved.

Preferred Alternative: 3 – Staff will evaluate the North entrance signage in conjunction with a signage plan for the entire park complex and will make improvements which will provide clarity for park users unfamiliar with the facility.

Nyack Beach State Park Entrance

Background for Analysis: The entrance road to Nyack Beach is supported by a retaining wall. Through the years this wall has deteriorated and is in need of reconstruction in several areas.

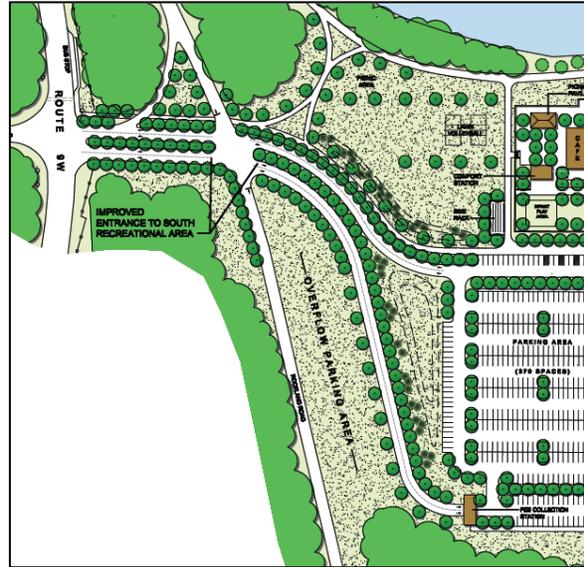
- Alternative 1 – Status Quo – Retaining walls continue to deteriorate potentially impacting the integrity of the entrance road.
- Alternative 2 – Entrance road retaining walls rehabilitated. – The access roadway to the main parking lot is supported by retaining walls. These walls will be rehabilitated to preserve the integrity of the road.

Preferred Alternative: 2 – The entrance road retaining walls will be rehabilitated.

South Entrance

Background for Analysis: Access to the South Parking Lot is relatively close to Route 9W and at several times a year traffic backed up onto the highway creating significant congestion.

- Alternative 1 – Status Quo – Traffic congestion remains at the South Entrance and along Route 9W during summer weekends and other busy periods. The collection booth remains in its current location.
- Alternative 2 – Reconfigure the South Entrance – Vehicular traffic flow will be improved at the South Entrance reducing traffic impacts to the area during heavy volume periods. The entrance roadway from Route 9W to the lot will be redesigned to provide additional stacking room for vehicles entering the lot. Collection booths will be relocated and improved with the addition of electricity and phone lines to allow the use of credit card readers and increase park communications. Other forms of electronic fee collection and access will be considered to enhance park operations and patron convenience.



Preferred Alternative: 2 – The South Entrance will be improved as shown in Figure 13 to reduce traffic congestion.

Roads

Knickerbocker Road

Background for Analysis: Knickerbocker Road has been deteriorating for years and as a result, is in need of repaving.

- Alternative 1 – Status Quo – The roadway continues to deteriorate and is patched as needed.
- Alternative 2 – The roadway is repaired as needed and resurfaced to provide a smooth surface for patrons and consistency with Rockland Lake Road.

Preferred Alternative: 2 – The roadway will be resurfaced. Deteriorating drainage culverts will be replaced or removed as needed.

Parking Areas

Background for Analysis: Many of the parking areas throughout the park are in disrepair and need of repaving. The largest lots, parking lot 1 and 4 are only filled to capacity on busy summer weekends and holidays. Much of the year these parking lots are not used to capacity. Through the public input process, several comments were received recommending the construction of satellite parking lots at various points in the park to improve formal access to trails.

- Alternative 1 – Status Quo – Parking Lots 1 through 6 remain at their current capacities and conditions, layouts and designated usage is not changed for any of the parking lots. No additional parking is considered.
- Alternative 2 – Improve Parking
 - Parking Lot 1 – Parking Lot 1 (North Lot) will receive significant improvements to enhance the patron experience, reduce congestion and improve the sustainability of the area. The majority of the parking lot will be screened from view from Rockland Lake Roadway enhancing the scenic qualities of the area. Along the roadway, a large planted berm will be constructed using a selection of native vegetation. The entrance will be relocated to a centralized location dividing the lot into quadrants. Three of the quadrants will be landscaped and paved. Parking islands will be developed and used to capture and naturally filter stormwater. Any overflow stormwater will be directed to an adjacent constructed wetland that will be used for educational purposes. A separate parking area will be constructed for the Nature Center, its associated boardwalk and nature themed playground. Minor realignment of the walkways between the Nature Center and the bathhouse will take place, addressing drainage issues associated with these areas. The fourth quadrant will be grass and will be used for recreational purposes for the majority of the year. On busy summer weekends, this area will be striped with chalk for additional parking.

A new collection booth will be constructed at the lot entrance to handle additional traffic volume and reduce traffic congestion on Rockland Lake Road. The collection booth will have electric service, allowing for credit card readers and air conditioning. See Figure 12 – *North Pool Area Plan* for more information.
 - Parking Lot 2 – A basketball court and/or playground will be created in/near the northern-most portion of the lot.
 - Parking Lot 3 – Parking Lot 3 will be included with the reservation of the proposed group shelter. On days the group shelter is not reserved, park staff, at their discretion, will open this area to public parking.
 - Parking Lot 4 – Parking Lot 4 (South Lot) will receive significant improvements to improve patron experience, reduce congestion and improve the sustainability of the area. The parking lot will be reconfigured to improve the spacing and sizing of recreational fields and parking lot access. In its new configuration, the lot will be paved using porous asphalt. To reuse and naturally filter stormwater from the parking lot and surrounding area, OPRHP/PIPC staff will investigate methods to reuse the pool as a below grade stormwater storage area. Staff will investigate methods to adaptively reuse the pool filter pumps as a means to irrigate the recreational fields during the summer months. The entrance to the parking lot will be improved to expand vehicular stacking room and reduce or eliminate impacts to traffic flow on Route 9W. A larger fee booth will be constructed which includes electricity for lighting, air conditioning and to accept electronic transactions. The parking lot will be closed in the winter to protect the porosity of the lot from plowing and sanding/salting activities and also protect the water quality of the lake from road salt. See Figure 13 – *South Recreational Area Plan* for more information.
 - Parking Lot 5 – A new collection booth will be constructed at this lot eliminating the need for two collection booths along Knickerbocker Road.

- Parking Lot 6 – Parking Lot 6 will be gated and made available for fishing and boat access only. Bicycle, running and other day users will be directed to use Parking Lot 1, upon improvements to the Parking Lot 1 area. The adjacent restroom will be completely rehabilitated to meet accessibility standards and provide a modern facility for patrons.
- River Trail/Cultural Resource Center Parking - To address access to the River Trail and the Long Path, a former trailhead from the mid-1900s will be reconstructed off of Landing Road near what is presently the park manager's house. This parking lot will significantly improve patron convenience, take pressure off of the undesignated street parking adjacent to the Rockland Lake Fire House and serve the Cultural Resource Center (the present park manager's house). The undesignated parking area will be closed upon the construction of this lot. See Goal 11 and Figure 14 - *Landing Road Trail and Cultural Interpretation Center* for more information.
- Nyack Beach Parking Lot – Historic retaining walls in this parking lot will be rehabilitated.
- *Haverstraw Beach Parking Lot – This parking lot will remain in its current condition. No improvements will be made.

Preferred Alternative: 2 - The parking lots will be improved or constructed as described above with the exception of the Haverstraw Beach Parking Lot which will remain in its present condition.

Chapter 3 – Selection of the Preferred Alternative

Selection of the Preferred Master Plan Alternative

In analyzing the status quo alternative and other alternatives, an emphasis was placed on improving the experience for the park patron. The park functions well in its current configuration, however, staff and patrons have indicated areas where changes and improvements can be made that will enhance the user experience and the variety of recreation options available at the park.

The preferred alternative improves recreational opportunities by enhancing the overall trail system including layout, signage and designating trailheads. Pedestrian connections will be improved throughout the park, particularly the connection between the Rockland Lake Trail and the River Trail along Landing Road. Court and field activities and picnicking opportunities will be expanded at the South Recreational Area. The swimming opportunities will be relocated to the North pool area. Other recreational elements including hiking, bicycling and running will remain the same.

The preferred alternative improves on the status quo in terms of natural resource protection by recommending park-specific strategies be developed to control invasive species and nuisance wildlife. The monitoring and protection of rare and endangered species and water quality of Rockland Lake will continue. It also recommends that a Bird Conservation Area be designated for undeveloped portions of the park complex.

Cultural resources will continue to be protected through the review standards set forth by OPRHP and the Field Services Bureau (FSB). A cultural resource protection plan will be developed for the park, addressing the many cultural resources.

Educational and interpretive opportunities are improved from the status quo by promoting the diverse resources. Park patrons will see enhanced educational and interpretive information throughout the park complex describing the significant natural and cultural resources. The Nature Center will have the existing space reallocated to improve its functionality and an expansion for classroom/multi-purpose space. A Cultural Interpretation Center will be developed in what is currently the park manager's residence and will focus on park and local history.

Operations and infrastructure are improved over the status quo alternative by installing new irrigation systems in the golf courses, coordinating with local utility suppliers to improve telecommunication, wastewater and water systems. Additional storage will be constructed on the tennis courts and at the maintenance facilities. A salt and sand storage shed will be constructed at the former wastewater treatment plant. The park maintenance operations will be consolidated at the North Maintenance Area during the winter season.

In choosing the master plan over the status quo, OPRHP and PIPC are making a commitment to improvements and changes in the park over the next decade, perhaps longer, which will be in the interest of users and staff, and will have a positive impact on recreation and the natural and cultural resources.

Chapter 4 – Environmental Impacts and Mitigation

Introduction

Consistent with the intent of the State Environmental Quality Review Act (SEQR), environmental factors were considered in evaluating the plan alternatives and in selecting the preferred alternative, i.e., the Final Master Plan. This chapter focuses on environmental impacts and mitigation of adverse effects. For the purposes of SEQR compliance the documents (Master Plan/EIS) satisfy the requirements for an environmental impact statement as specified in Part 617, the rules and regulations implementing SEQR. The environmental setting is discussed in Chapter 1, and Chapter 3 and Chapter 4 contain the alternatives analysis.

This chapter has two primary parts: a summary of environmental impacts associated with alternatives and a more detailed analysis of impacts associated with implementation of the Final Master Plan for the Park Complex including a discussion of mitigation measures.

Environmental Impacts of Alternatives

In Chapter 3, alternative management and development directions were developed for the parks using information on existing conditions, the analysis of recommended directions for activities, and constraints and considerations identified in the resource analysis. The Final Master Plan for the park complex consists of the preferred alternative each identified activity and resource in the park.

Much of the information on the environmental impacts of alternative actions is discussed in Chapter 3. The following is a summary of the findings from the impact analysis of the status quo and the preferred alternative.

Status Quo Alternative

The Status Quo alternative consists of the current facilities, programs and practices as described in Chapter 1 (Environmental Setting). Under this alternative, the current resource protection, operation, and facility management practices would continue. The increasing demands on the facility would not be addressed or impacts mitigated. Any improvements would be assessed on a case by case basis.

The Status Quo alternative would result in no disturbance from proposed development, including roads, parking, buildings and infrastructure needs. While this alternative would ostensibly not result in any additional adverse environmental impacts, the potential for long-term indirect adverse environmental impacts is likely, since there would be no plan to guide use and implement protection measures. It is predicted that additional demands will be placed on the facility's resources. Natural resources may be degraded without adequate planning and measures to assure their preservation. Projects that may be undertaken on an as-needed basis would require individual reviews under SEQR. A master plan will direct the manner in which use and development should proceed to protect sensitive areas and reduce the potential for adverse impacts on environmental resources. It also lays out what projects may proceed under the Master Plan/EIS as well as those that may require additional review.

Preferred Alternative and the Final Master Plan

The preferred alternative is the compilation of the preferred recreation activity and resource stewardship options identified in Chapter 3. This compilation within Chapter 4 and the master plan was subject to a final evaluation (or synthesis) to assure that there was consistency among the various alternatives. The master plan provides considerable recreational and resource protection

benefits. This final master plan and EIS also identifies potential adverse impacts, both short and long term, as well as ways to minimize, if not eliminate them to the fullest extent possible through appropriate mitigation measures. From a long-term perspective, implementation of the master plan will result in a beneficial environmental impact by insuring that the most sensitive areas will be identified, monitored and provided appropriate stewardship. Environmental impacts of the final master plan are discussed more fully in the rest of this chapter.

Potential Environmental Impacts associated with Implementation of the Final Master Plan and Mitigation

Land (Topography, Geology and Soils)

The master plan seeks to provide improvements to existing recreational programs and opportunities while providing additional protection of sensitive natural and cultural resources. Planning for new facilities reflects this and the proposed actions avoid sensitive resources to the extent practicable. Implementation of the plan elements, however, will result in some physical change and disturbance to the land, some more than others. The following is a discussion of the larger master plan projects and their impact to the landscape. A listing of smaller projects that will have a physical change to the park then follows this section.

Landing Road Trail and Cultural Interpretation Center - This facility could be considered “new” in that these facilities do not formally exist in this area at present. The proposed development however, will use the existing roadway and house, and the proposed parking area and trail will actually be located within an area where either former quarrying or riverfront park facilities were once located decades ago.

While construction of this project will take place on a steeply sloped area, the layout is such that only minor grading to the land along the cross slope and installation of base rock for the surfacing material will be required. It is expected that materials excavated for the trail can be used as fill in other areas of construction so there will be no excess material to dispose of elsewhere. Due to the presence of former historic structures and nearby unique cliff areas, final layout of this facility will include review by appropriate agency staff (e.g. Park Manager, SHPO and Regional Natural Resource Steward) to ensure consistency with trail standards and protection of historic and environmental resources.

North Pool Complex - The North Pool Complex reconstruction will take place entirely within the “footprint” of the existing facility. Soil will be brought in to create berms between Rockland Lake Road and the parking lot and will be planted with native vegetation. The reconstruction of this area, particularly the parking lot, will include features to improve stormwater management and will impact previously disturbed soils.

South Recreational Area Complex - The reconstruction of the South Recreational Area will include grading to create recreational fields and courts and reconstruct the entrance area. This project will take place within the limits of the existing developed area and will also incorporate best management practices for stormwater management to improve playing surfaces and reduce impacts to the lake.

Permeable pavement and other features will be incorporated into the final design features to minimize and manage stormwater runoff and potential erosion impacts. Overall however, it is expected that these projects will improve the current drainage in this area, which is in need of rehabilitation and stabilization.

Golf Courses – Both the Championship and Executive Golf Courses will receive new irrigation systems that will include the installation of new equipment such as water lines, sprinkler heads and pumps resulting in minimal ground disturbance to previously disturbed land. The new lines can be installed in a manner that will require little ground disturbance and will generally be placed adjacent to the existing lines. The majority of soil disturbance will take place at junction points and valve boxes where connections are required and in areas where drainage improvements are made. Soil removed for the installation of the irrigation components will be stockpiled and reused upon the installation of the irrigation components.

The dredging of the irrigation ponds will require that the bottom sediments be tested for any contamination before they are removed. This testing will be done in accordance with a protocol approved by NYS DEC and the results will determine if, where, and how the dredge spoils can be disposed of or re-used. If not contaminated, they may be able to be stockpiled at the park for use in other projects requiring minor fill or soil amendments. If sediment tests indicate that there is any contamination then a suitable disposal location will need to be identified and approved by NYS DEC. Appropriate dewatering and erosion controls will be used during the dredging process to ensure that the sediment is contained until it is dry enough to be moved.

Trails - The master plan calls for some improvements to the trail system, which are not expected to have negative impacts on the land. Several small areas, totaling approximately ¼ mile, need rehabilitation to reduce ongoing erosion. The policy and guidelines for trail building, maintenance and closure that have been established by recognized trail organizations and governmental agencies will be followed. A compilation of standards that OPRHP uses is provided within the OPRHP Technical Documents located at: <http://nysparks.com/recreation/trails/technical-assistance.aspx>.

These established guidelines will assure that work will be completed in a manner that maximizes the protection and preservation of resources. All portions of trails to be closed will use appropriate and sustainable closure methods and will be restored using native vegetation, as necessary. Sections of existing trails that are currently experiencing erosion will be evaluated on a case-by-case basis and stabilized or realigned to a more sustainable route.

Salt Shed - Demolition of the former sewage treatment plant and construction of a new salt storage shed will require some ground disturbance to remove the existing remnants of the plant and level the area. Some additional fill may be required as well to create a level area for installation of the salt shed. The new shed will be constructed so as to prevent runoff of salt and sand into adjacent parkland.

Culvert Replacement/Removal - There are numerous culverts around Rockland Lake that are in need of replacement. In some cases they may be able to be removed altogether, such as in the case of a box culvert that is located under a portion of the former Route 9W right-of-way near Parking Lot #5. This culvert no longer serves the function it was originally intended for, as this portion of roadway was abandoned. These types of projects will require excavation to regrade banks and will incorporate erosion and sedimentation controls and restoration of disturbed areas with native vegetation.

Other projects proposed under the master plan will include relatively minor grading and earthwork. These include:

- Playground installations
- Construction of a new comfort station near Nature Center
- Reconstruction of the Nature Center and rehabilitation of the wetland boardwalk

- Rehabilitation/improvements to Rockland Lake Trail, River Trail and Long Path
- Construction of trail from Parking Lot 2 to Landing Road
- Improvements at North Maintenance facility
- Former wastewater treatment plant removal
- Stabilization of key River Park structures
- Renovation of the Lot 6 comfort station
- Construction of a maintenance storage shed over former tennis courts
- Construction of a group picnic shelter at Lot 3
- Construction of a fishing pier on the south end of Rockland Lake

All projects that involve ground disturbance, whether new or within an existing developed area, will minimize sedimentation and erosion impacts through the use of Best Management Practices as described in the New York Guidelines for Urban Erosion and Sediment Control (NYS DEC 2011). This includes incorporating information into the project plans on the soil characteristics at each project site and the limitations of soil types with respect to stormwater management and soil characteristics. It also includes the use of various techniques such as silt fencing, preservation of vegetated buffers, and seeding and mulching of disturbed areas as soon as possible after project completion. Pervious pavement, vegetated drainage swales and proper drainage design will be used in the design where applicable, to help mitigate water quality impacts from runoff following storm events. Disturbed areas will be restored using native vegetation following construction. Where feasible, green design will be utilized for the buildings as much as possible, to minimize the effects of roof runoff. Projects that will disturb one acre or more will be subject to the State Pollution Discharge Elimination System (SPDES) General Permit process. This process will require the preparation of a site-specific Storm-water Pollution Prevention Plan (SWPP.)

The master plan also points to the need to upgrade and replace utility lines and wastewater treatment systems. These projects may be replacement in kind and involve minor impacts or they may require relocation and potentially more significant environmental impacts. As these plans are not yet begun, they will also receive additional review under SEQR when further design details become available.

Water Resources

It is not anticipated that the implementation of the master plan will have significant adverse environmental impacts on water resources. The “Land” impacts section above included discussion of how construction will incorporate sedimentation and erosion controls to minimize impacts to water quality from runoff. Several projects such as culvert removal or trail rehabilitation will reduce erosion, restore impacted areas and in turn provide better protection of Rockland Lake and the Hudson River. Several of the natural resource management strategies provide guidance for the future management and protection of important water resources such as wetlands, streams, Rockland Lake and the Hudson River.

The following specific projects identified in the master plan have the potential to affect water resources:

ADA accessible fishing dock platform at the South Recreational Area - The construction of this facility will improve fishing access to the lake in an area suitable for fishing. This project will require permits from the NYS DEC and US Army Corps of Engineers for any work below the mean high water mark and all permit conditions regarding mitigation of water quality impacts will be followed.

Wetland Boardwalk Rehabilitation – As this work will replace deteriorated sections of the boardwalk in the same location, impacts to the wetland are expected to be minimal. OPRHP will consult with NYS DEC to determine if a permit is required for this work, and for input on design or appropriate water quality protection measures that should be used during construction to protect water quality.

Nyack Beach - At Nyack Beach, proposed work will include rehabilitation of the seawall and parking lot, as well as improvements to drainage. Consideration will be given to incorporating more permeable materials in the parking areas and using native vegetation along the shoreline. Additionally, the site will be considered for design and implementation of an ecologically enhanced engineered shoreline that would provide improved aquatic habitat within the river parallel and adjacent to the existing seawall. Permits from NYS DEC and the US Army Corps of Engineers will be required for this work.

Parking Areas – A decrease in impervious surfaces will result in a decrease in the quantity and velocity of runoff generated during storm events. The new parking areas at the North Pool and the South Recreational Area will use pervious pavement, bioswales and/or rain gardens to minimize the impacts of stormwater runoff. Regional engineers will investigate opportunities to reuse the former South Pool as a subterranean stormwater storage facility or filtration basin. During the design of the Cultural Interpretation Center parking lot, best management practices will be used in determining surfacing materials and a stormwater management design.

Golf Course Irrigation Pond Dredging – Both of these ponds have gradually silted in over time and the goal of this project is to remove bottom sediments in order to provide an adequate volume of water for the new irrigation systems. The exact method of dredging is not known at this time, but mitigation of water quality impacts from turbidity will be incorporated into the design if required. Mitigation techniques will be developed in consultation with NYS DEC and US Army Corps as permits to undertake this work will be required from both agencies. If dredged materials can be disposed of in an upland location within the park, an appropriate location will be used that will not impact other water resources or sensitive environmental areas.

Golf Course Operations - Potential impacts to the water quality will be reduced through the construction of a golf cart wash area and a chemical mixing station at the golf course maintenance area using Best Management Practices.

Air Quality

When fully implemented, the master plan will result in increased use of the parks. Resulting air quality impacts from increased traffic, however, are not expected to be significant. Short-term, temporary air quality impacts may occur due to a minor temporary increase in vehicle exhaust and some generation of dust during construction. These will be temporary and localized and will occur over time as the plan is implemented.

Plants and Animals

General

Limited new development is proposed in this master plan and, therefore, direct impacts to biological resources are expected to be minimal. Projects have generally been sited in areas with previous development, limited environmental sensitivity and that generally possess accessibility to, and use of, existing infrastructure.

The natural resource management strategies provide guidance for the future protection of biological resources. There is one significant ecological community of statewide significance within the park, a 175-acre Oak-tulip tree forest, and park management strategies are called for that will provide some additional protection of the plants and animals within this community.

Vegetation/Plants

Facility rehabilitation and development will require removal of some minor amounts of vegetation during construction. The new picnic playground area will be designed around the existing landscape and will preserve existing trees and add additional ones. There will be some select trimming or tree removal to improve views surrounding Rockland Lake and along the River Trail.

The cultural interpretation center/River Trail parking lot will require tree removal. This former parking lot has not been used in over 50 years and as a result, many mature trees are now present. The significant oak-tulip tree community is located near this area but the layout of the proposed facility will avoid it. This area will be delineated during construction so that it will not be inadvertently impacted.

The redesign of the North Pool Area and the South Recreational Area both call for planting a significant quantity of trees. The number of trees proposed in these two designs significantly offsets tree removal in the park for other proposed projects in the master plan implementation.

None of the construction/rehabilitation proposed under the master plan will be located near known rare plant locations; however, the Natural Heritage Survey report calls for a search for rare plants prior to any development or new management practices. During the design of the proposed rehabilitation and development projects, the Regional Natural Resource Stewardship Biologist will be consulted regarding the need for additional rare plant surveys in these areas and regarding any trees to be removed.

Areas that will require vegetative restoration or as part of a larger design will incorporate the use of native species or historically appropriate non-invasive species that are indigenous to the area. The Regional Landscape Architect and the Regional Natural Resource Stewardship Biologist will be consulted regarding the appropriate species to be used in any planting plans. In addition, all work in facility development and site design will be consistent with OPRHP's Tree Management Policy (OPRHP 2009).

Animals

The designation of a Bird Conservation Area (BCA) will provide added recognition of the importance of the facility for bird habitat, particularly as a waterfowl concentration site, migratory bird concentration area, diverse species concentration site, individual species concentration site, species-at-risk site and a bird research site. A Management Guidance Summary (MGS) has been developed and is included in Appendix B. The MGS provides site specific recommendations relating to habitat protection, access, operation and education and outreach programs focusing on the protection of birds and bird habitats.

Current wildlife policies and practices will continue in consultation with NYS DEC. The plan's natural resource management strategies call for the continued management of mute swans as well as developing strategies to manage turkey vultures, black vultures, and deer more effectively.

Control of nuisance Canada geese around heavily used recreational areas has been successful and controls such as egg treatment and hazing will continue. Deer population levels are adversely affecting the vegetation at the park through overbrowsing. The master plan calls for the collection of additional information about the size of the current deer population and the establishment of

vegetation monitoring plots. Analysis of this data will then allow for more informed decision making with regards to future management options or strategies.

The construction and use of new facilities has the potential to impact wildlife. Wildlife can be impacted either directly during construction activities or indirectly through the effects associated with use of the areas following construction. In general, areas proposed for improvements either through rehabilitation or new construction are not located near sensitive environmental areas and are not expected to significantly impact wildlife in the area. Construction in OPRHP facilities is usually planned for the late fall and winter when public use is lower. This timing can mitigate disturbance to wildlife by avoiding periods of higher biological activity, such as bird breeding seasons. Site-specific design of new facilities and trails will include surveys for sensitive or rare species or habitats. If needed, proposed facilities or trails will be re-located to avoid or minimize any adverse impacts.

Invasive Species

Trail use, boating, driving through the park and other uses can facilitate the spread of invasive species. Invasive plant seed can be inadvertently introduced on construction equipment and through the use of mulch, imported soil, gravel, and sod. Some invasive plant species may have been intentionally planted in erosion control, landscape, or wildflower projects in the past. Additionally, invasive plants migrate into the park from the surrounding communities.

The Natural Heritage Program report identified invasive species as a significant threat to the biodiversity of the Park Complex. The master plan calls for a focused approach to invasive species management to prioritize control efforts so that control of invasive species can be done in the most effective manner, from both an ecological and economic perspective. Early detection and rapid response for species such as mile-a-minute and black swallow-wort will also be part of this strategy to limit infestation by these particularly aggressive invasive species.

Best Management Practices (BMP) will be implemented to minimize spread of invasive species. Practices such as proper material disposal and equipment cleaning methods limit the potential of invasives to establish in new locations within and beyond a site. Using existing examples, OPRHP will develop BMPs for invasive species control that can be tailored to park-specific projects and operations.

The emerald ash borer, Asian long-horned beetle, and the hemlock woolly adelgid have the potential to result in major damage to the forests if they are introduced into the park. Precautions such as surveying and monitoring for such species is ongoing and will be part of the invasive species control efforts.

Such invasive species control efforts will have beneficial impacts on native flora and fauna.

Scenic Resources

The scenic character of the Park Complex is a very significant resource of the Hudson Valley and is located within an area designated by the NYS Department of State's Coastal Management Program as a Scenic Area of Statewide Significance (SASS). Implementation of the master plan will not result in any significant adverse impacts on scenic resources. The plan proposes continued maintenance of existing scenic vistas and does not recommend any construction within significant view sheds.

New construction or renovations to existing structures will be designed to complement their surroundings and will not be visually intrusive. Opening new views, such as within the new group picnic area adjacent to Parking Lot 3, will be done in a phased manner to minimize vegetation removal while providing views of the lake. The new equipment storage area will be well screened from the Championship Golf Course by topography and vegetation and will be oriented in a manner which does not visually impact patrons.

Cultural Resources

The master plan will have beneficial impacts on the many significant cultural resources within the Park Complex. A Cultural Resource Plan will be prepared to develop strategies to address how to document and protect cultural resources throughout the parks. In particular, it will address what steps are necessary for structures adjacent to high use zones or areas impacted by projects identified in the master plan. This plan will compile and provide important information about these resources and provide guidance for their future management, protection, stabilization or demolition.

The adaptive reuse of the park manager's residence as a Cultural Interpretation Center will provide new opportunities for cultural interpretation. This will primarily involve modifications to the interior of the structure and associated retaining walls.

Any projects proposed for structures that are on or eligible for the State or National Register of Historic Places will be reviewed by OPRHP's Division of Historic Preservation unless it falls within a categorical exclusion (see Appendix A for listing).

The park complex is archeologically sensitive and any projects or activities that require ground disturbance either associated with the master plan or routine operation and maintenance will require review by OPRHP's Division of Historic Preservation to insure that such resources are not adversely impacted. The Categorical Exclusion Listing also includes ground disturbance projects that do not require review.

Improved signage and interpretive materials will increase understanding of the history of the parks. In particular, interpretation of the River Park era and the ice and quarrying industries will increase awareness of this important chapter in the parks' history.

Recreation and Open Space

Implementation of the master plan will result in substantial improvements to virtually every aspect of the parks' existing recreational facilities including the rehabilitation/reconstruction of the North Pool and bathhouse, picnic areas, the South Recreational Area (formerly the South Pool Area) and golf courses. The proposed reconstruction of the South Recreational Area will better meet current park recreational needs and provide the flexibility needed to accommodate a multitude of activities. Three playgrounds will be constructed to improve opportunities for children's play. There will also be enhanced interpretive opportunities, such as the reconstruction of the nature trail and boardwalk and the installation of educational panels at various points throughout the Park Complex.

Improvements to the trail system will result in an increased connectivity between trails and reduce user conflict along the Rockland Lake Trail. The construction of the Landing Road Trail will impact both cultural and natural resources, however, it will be done in consultation with the Regional Biologist and SHPO to have the least impact possible. This trail will provide improved pedestrian connectivity between the trails at Rockland Lake State Park and trails on Hook Mountain, Nyack Beach, and Haverstraw Beach State Parks.

The 1,943 acres of public parkland in the Park Complex on the Hudson River are an important piece of the region's open space system. The park complex provides significant open space that will continue to be protected under the master plan. OPRHP will evaluate and consider acquisition of fee, title or easements on adjacent open space areas as they become available. It will also monitor any development proposals that may affect the quality of its scenic and open space resources.

Traffic and Access

Implementation of the master plan will result in some access improvements, but does not call for any significant changes to traffic patterns or access to the Park Complex.

Traffic patterns for the North and South lots will be reconfigured to improve access and circulation patterns and will include permeable overflow parking areas and improved signage. Additional stacking areas will be provided for vehicles waiting to enter the park to reduce traffic impacts along park roadways and along Route 9W. Overall, the quantity of parking spaces will remain the same. During peak capacity, cars will be directed to park on grass overflow parking areas.

Full implementation of the master plan will result in increased use of the complex and a potential associated increase in traffic. The capacity of the existing road system was examined during the planning process and it was determined that it generally functions effectively and with the proposed improvements called for in the plan, the system should be able to accommodate added use and provide for safer traffic flow as well.

Public Health and Safety

OPRHP and PIPC place a strong emphasis on safety. New and rehabilitated facilities will be designed and constructed to meet all applicable health and safety codes including compliance with the Americans with Disabilities Act. Design and rehabilitation of infrastructure systems such as electric, water, and sewer will ensure public health protection.

Energy, Noise and Odor

Sustainability principles and energy efficiency will be incorporated into the design of all proposed construction. Any new structures will utilize sustainable design practices and any renovations to existing structures will incorporate sustainable elements when feasible. Master plan implementation may result in some temporary increases in noise during construction. Construction is generally scheduled for periods of low park use to minimize impacts on public use.

Unavoidable Adverse Effects

The proposed master plan will result in some unavoidable adverse impacts. These will be primarily construction related (e.g. dust and noise from construction equipment and vehicles, etc.). There will be a loss of vegetation in areas as a result of construction of the proposed Landing Road Parking Lot and the group picnic shelter adjacent to Parking Lot 3. Trees will be selectively removed within the Knickerbocker ice house foundations and possibly to restore historic scenic vista points around Rockland Lake.

Irreversible and Irretrievable Commitments of Resources

The planning, development and implementation of this master plan including rehabilitation of facilities and new construction has and will involve the irreversible and irretrievable commitment of public resources in the form of time, labor and materials. It will also require a commitment to the long-term operation and maintenance costs of the park.

Impacts on Growth and Character of Community and Neighborhood

It is anticipated that implementation of the master plan will result in increased use of the Park Complex. This increased use will be managed to maintain the quality of the natural, scenic and historic resources. The increase is expected to result in positive economic impacts to the communities surrounding the facility in the form of increased business to gas stations, restaurants

and convenience stores. Tourism-related expenditures for the day use activities that are offered at the parks will also support the local economy.

Many local residents take advantage of the opportunities these parks have to offer. It is expected that implementation of the master plan will increase the awareness of this facility throughout the state and that it may become a destination for more visitors.

Supplemental Environmental Review

Portions of this Master Plan/EIS are somewhat general or conceptual. Decisions regarding the type and extent of certain actions will be dependent on the findings from more specific studies or analysis still to be completed. The findings from these site specific evaluations may identify impacts that were not addressed or known during the development of this plan/EIS. Under such a circumstance, an additional or supplemental environmental review will be required.

As part of the agency's responsibility under the State Environmental Quality Review Act, OPRHP/PIPC will review proposed implementation projects with respect to consistency with this plan and EIS. Projects found by OPRHP/PIPC to be consistent with the plan can go forward without any additional review. Other types of proposals may require additional review ranging from completion of an environmental assessment form to perhaps a site specific environmental impact statement.

To assist in this consistency evaluation, the following types of actions have been identified as likely to require additional review under SEQR:

- Any new actions not addressed within the master plan that do not meet the Type II categories with Part 617, the rules and regulations implementing SEQR;
- Any change from the preferred alternative for recreational and facility elements of the plan that would result in significant environmental impacts;
- Any leases, easement, designations, memoranda of understanding, or other agreements between OPRHP/PIPC and private entities or other agencies that affect resources in a manner that is not sufficiently addressed in this plan;
- Any project determined through review by the OPRHP Division for Historic Preservation to have an Adverse Impact on historic or cultural resource at the parks;
- Any proposals for new trails, trail segments or trail uses not addressed within the master plan;
- Non-point stormwater runoff mitigation controls that affect parkland;
- Relocation of utility lines or wastewater treatment systems.

Coastal Zone Management Program Consistency

The Park Complex is located on the Hudson River within New York's coastal area. In accordance with the New York Waterfront Revitalization and Coastal Resources Act (Executive Law Article 42) state agency actions within the coastal area must be evaluated for their consistency with the State's coastal policies. The overall objective of this program is to assure a balance between development and preservation of the State's coastal areas.

After a review of all policies (NYCRR Title 19, Part 600.5), OPRHP determined which policies are applicable to this master plan. A Coastal Assessment Form (CAF) was completed to assist in the identification of applicable policies. The CAF and discussion of those policies are provided in Appendix C. Policies applicable to the plan include those related to water-dependent uses and

facilities, development in areas where public services are adequate, significant fish and wildlife habitat, access to public water-related recreation, water-dependent and water-enhanced recreation, significant historic and cultural resources, scenic resources of statewide significance, best management practices, and protection of wetlands.

Summary

Based on the coastal policy discussion contained in Appendix C, it is OPRHP's and PIPC's determination the action's contained within the master plan will not substantially hinder the achievement of any of the policies and purposes of the State Coastal Policies as described in the New York Coastal Management Program.

Chapter 5 - Comments and Responses

Introduction

This section contains the responses to the comments received by OPRHP on the Draft Master Plan and Draft Environmental Impact Statement (DEIS) for Rockland Lake, Hook Mountain, Nyack Beach and Haverstraw Beach State Parks. The Draft Master Plan/DEIS was issued February 27, 2013. A public hearing was held on March 27, 2013 in the Rockland Lake State Park Championship Golf Course Clubhouse, Congers, NY. The comment period ended April 10, 2013.

During the public hearing, 15 of the approximately 60 people in attendance spoke and their comments were recorded. During the comment period for the Draft Master Plan/DEIS, the Agency received 14 comment letters. A list of persons providing comments is included at the end of this chapter.

OPRHP appreciates the time and effort that persons interested in the future of Rockland Lake, Hook Mountain, Nyack Beach and Haverstraw Beach State Parks have invested in their review and comments on the Draft Master Plan/DEIS and their participation in the public hearing.

The types of comments received included document editing suggestions, requests for clarification of information presented in the document, comments related to specific aspects of the plan or recommendations for inclusion in the final plan. All comments were reviewed and organized by categories.

Responses to these comments are found in this section and were considered in the revisions found in this Final Master Plan/Final Environmental Impact Statement (FEIS).

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Comments and Responses

Editorial Comments on the Draft Master Plan

Comments:

Page 4 – The reference to the Grove is not in the correct location. The Grove was at the north end of the lake. The area you are referencing is the Quaspeck Park Beach Club and Casino.

Quaspeck is an Indian name for little pond. The "special trains" did serve the Grove but again that was for the local town people and entered at the north end of the park.

Page 5 – Please include that the River Parks also had a lot of day trippers arriving from New York City by paddle-wheel steam ships.

Page 6 – Nyack Beach State Park. My understanding is that this was the first land purchased by the PIPC in 1911 not 1938.

Page 6 – In the “Past Planning” section it's my understanding that the North park opened June 1965 not that the Commission "revealed" its plan.

Page 8 – The Map, there is reference to Rockland "Beach". This should be changed to Park. Also, the green area identified as Hook Mountain State Park, however the map locator just reads "Hook Mountain". It should be clarified in the plan that the identified area is the park boundary, not the actual mountain in its entirety.

Page 14 – The report references Collier Road. This should be changed to Collyer Avenue.

Response: These corrections and additions have been made.

Cultural and Historic Resources

Comment: Find a sponsor to lead the restoration of the Nyack Beach Bath House and lease the space above the Nyack Beach Bath House to an appropriate local group.

Response: Staff will consider alternate uses for the Nyack Beach Bath House. Staff will investigate specific opportunities for this structure that are both complementary to the public use of the area and protective of the historic nature of the structure.

Comment: Every effort should be made to renovate, and not demolish structures that appear to have been built during the *Works Progress Administration* (WPA).

Response: The cultural resource survey will include all historic structures and their associated site defining features, including buildings that are associated with the WPA era. This survey will provide a basis for the development of strategies to preserve and stabilize historic structures and their sites. There may be cases however, where reasonable methods for preservation and renovation are not realistic or feasible and in these circumstances documentation and demolition may need to occur.

Comment: Protecting the crumbling infrastructure of the old Civilian Conservation Corps (CCC) and WPA constructed trails, rock walls, bridges, stairs and buildings should be a high priority.

Response: As noted in the master plan, a cultural resource survey will be conducted throughout the park complex. The cultural resource survey will provide a basis for priority ranking historic infrastructure, and in consultation with OPRHP's Division for Historic Preservation, it can be determined what resources are most critical as well as most feasible to protect, restore or stabilize. Funding can then be directed to those of highest priority.

Comment: When constructing the Landing Road Trail, be considerate of the archaeological resources.

Response: To protect the archaeological resources, the State Historic Preservation Office will be involved in the construction of this project.

Comment: Historical resources were combined with cultural resources in the plan and should be separated.

Response: Historic resources are a component of the broader category of cultural resources. The plan will remain consistent with this concept.

Comment: The plan should discuss the Josephine Hudson House and recommend rehabilitation or at least stabilization.

Response: More information and a webpage link has been included in the plan on page 10 and 15 concerning the Josephine Hudson House.

Comments:

- Up until ten years ago, the Rockland Lake History Museum was located in the Nyack Beach Bath House. The plan should recommend reinstating this museum in the bath house.
- The utilities should be upgraded or installed in the Nyack Beach Bath House. Look into long term agreements with concessionaires where improvements are included in the contract.

Response: Staff will consider this as part of alternate uses for the Nyack Beach Bath House.

Comment: Brush and debris should be removed from Ice House # 3. Ten to 15 years ago, PIPC cleaned this area up and planned on conducting some rehabilitation work, however, the project was never started. The area is now overgrown once again and almost unrecognizable.

Response: Staff will continue to maintain this area as funding and resources are available and will work with interested volunteer organizations.

Comment: The plan should identify archeological work regarding the Lenape Indians.

Response: Archaeological work has been conducted in and around the park. Funding issues have precluded any in-depth studies in the park, however, it will be noted that future archaeological work should be considered.

Natural Resources

Comment: While the plan does consider several alternatives to address the impacts of a burgeoning deer population in this area, it is recommended that the alternative of deer birth control be re-visited. At a minimum the communities and parks that have used it with a modicum of success should be contacted.

Response: The agency stands by the information presented in the plan's alternative analysis regarding the use of immunocontraception. The use of this alternative is allowed only as part of an experimental permit, is costly and is not currently considered as a viable stand-alone option according to the NYS DEC, who are responsible for management of the state's deer population.

Comment: In support of the Plan's recommendation to form a management working group, it is suggested that OPRHP staff join an existing committee made up of environmentalists, hunters, gardeners, and park managers in Rockland that are currently studying deer impacts in Rockland County and formulating a management strategy. The expertise that OPRHP and the other State Agency representatives would bring to this group could greatly assist in working towards solutions to a regional problem which one county or community simply cannot solve alone.

Response: PIPC is a member of this committee and will continue to participate in it and coordinate with OPRHP.

Comment: Whatever deer management options are considered, insure that deer aren't just driven out of the park and into nearby neighborhoods where the overabundance of deer is also a problem.

Response: The plan proposes a short term strategy using fencing to protect rare plant populations from deer browse and a long term strategy to form a working group to address both deer impacts from a more regional viewpoint. As per the above comment OPRHP can be part of an existing committee that is already looking at the issue from a broader perspective and will evaluate options that will not simply shift the impact from the park to adjacent lands.

Comment: Invasive species are inundating the area and their management should be raised on your priority list.

Response: The priority list is flexible and upon available funding can be raised in priority. Localized management of invasive species will continue.

Comment: Any vista maintenance or trail vegetation maintenance within a quarter mile of the peregrine falcon eyrie/nest should be done between August 1st and March 31st.

Response: Vista and trail maintenance within a quarter mile of a peregrine falcon nest will be conducted between August 1st and March 31st.

Recreation

Comment: Please include the planting of trees in the golf course renovations. Many trees have been removed due to damage and have not been replaced.

Response: The plan has been amended to include this.

Comment: Coordinate with the NYS Department of Transportation (DOT) as soon as practical to improve safer bicycle and pedestrian connections between the Tappan Zee Bridge and the park. Connections to the park should be investigated where North Broadway and/or North Highland Ave meet the park. Investigation into some of the old quarry sites as a means to provide gradual and safer access to the riverfront trail from Nyack should also be considered. The master plan should identify what will be done to accommodate the increase in bicyclists once the Tappan Zee Bridge project is completed.

Response: OPRHP and the NYS DOT are coordinating to determine feasible opportunities for bicycle and pedestrian connections to the Tappan Zee Bridge.

Comment: When rehabilitating the North Pool to have a “zero entrance”, considerable redesign of the water circulation system may be needed. Also, some wet edges of such minimally sloped surfaces frequently become slippery unless well maintained.

Response: The redesign of the pool is underway and has taken into consideration water circulation modifications and safety factors associated with the zero entrance design.

Comment: At Nyack Beach, if the first 30' of the west end of the dock were built on top of a solid structure the beach would re-build and provide added protection from currents and waves for kayaks and other car-top craft.

Response: The proposal for rehabilitation of the Nyack Beach shoreline was discussed further in the DEIS on page 72. This additional information will be added to the Action Step discussion on page 20 of the Master Plan document. OPRHP is currently working with staff of NYS DEC and the Hudson River National Estuarine Research Reserve Program to develop an ecologically enhanced shoreline design at Nyack Beach that will provide improved aquatic habitat within the river parallel and adjacent to the existing seawall.

Comment: Where the park roads are used for bicycling, on pavement markers such as “sharrows” should be considered.

Response: The roadway around Rockland Lake is a County road. This comment will be conveyed to Rockland County for consideration.

Comment: To encourage more people to bicycle and walk to the park rather than drive their cars, the entrances to the park should be improved to be more pedestrian friendly.

Response: OPRHP will coordinate park entrance improvements proposed within the Master Plan with NYS Department of Transportation to assure that each entrance is designed appropriately in achieving safe pedestrian crossing opportunities.

Comment: Bicycle racks should be provided around the park so people can safely leave their bikes while they use the park.

Response: The Master Plan has included a significantly sized bicycle parking rack area in the South Complex re-design, another located adjacent to the proposed cultural resource center along the riverfront, and will also incorporate a bicycle parking rack area within the north pool complex during that areas design development stages.

Comments:

- People shouldn’t be turned away from using Nyack Beach because of parking. A solution should be developed to allow more people to park there. The gate to Nyack Beach should also be open in the winter for people to enjoy. If the park doesn’t have the funds to keep the park open in the winter, the Friends group should be contacted for assistance.
- Consider adding more parking to the Nyack Beach area to relieve parking pressures. In the 1930’s to 1950’s a tiered approach was used on both sides of the road by the park manager’s office.

Response: The parking at Nyack Beach is deemed adequate. Overflow parking is provided in the upper plateau as needed. A public/private partnership will be considered to keep the park open during the winter months.

Trails

Comments:

- Conduct a separate review or report for the river trail to identify design issues, natural hazards and maintenance strategies to limit future problems.
- The highest priority should be placed on the rehabilitation of the River Trail between Rockland Lake and Nyack Beach.

Response: The River Trail is presently being rehabilitated with engineering oversight. Due to its proximity to the Hudson River and slope of the land, ongoing erosion issues will occur; however, this trail is incredibly popular and provides significant recreational and scenic value at the park.

Comment: The Landing Road Trail should proceed all the way down to the River Trail. Consider constructing stone stairs similar to the ones at Bear Mountain on the Appalachian Trail.

Response: Trail access is presently provided to the river via the current trail system. A stairway directly to the River Trail will not be constructed.

Comment: The convenient and free trailhead parking area for the Long Path should be kept at the top of Landing Road.

Response: The development of a trailhead parking area at the top of Landing Road was considered during the planning process, however it was not selected as the preferred alternative due to the close proximity of the local residential community, conflicts with emergency response volunteer fireman parking arriving at the firehouse, lack of space to provide an adequately sized lot, and roadway ownership issues. The proposed lower lot will eliminate congestion in the residential area, continue to provide adequate access to the Long Path while also providing excellent access to the Cultural Resource Center and to the River Trail. The existing undesignated parking area at the top of Landing Road will be eliminated and replaced with an informational kiosk area.

Comment: Parking lots should be created along Route 9W for Long Path users.

Response: The creation of a parking area along 9W, both at northern and southern ends of the park and nearby Long Path access points was initially considered during planning, but immediately removed from consideration in both instances due to dangerous and non-conforming DOT highway access standards. It is expected that the new Landing Road lot will provide adequate parking access for Long Path users. Parking at all informal pull-off areas along 9W will continue to be prohibited.

Comment: The highest priority should be placed on the rehabilitation of the River Trail between Rockland Lake and Nyack Beach.

Response: Emergency storm damage contracts and repairs are currently underway toward stabilizing and repairing severely damaged segments River Trail.

Facility Improvements

Comment: There is no need to construct the proposed Landing Road Trail. The existing road already functions as a path.

Response: The construction of a pathway will serve patrons in multiple ways. It will provide easier access for patrons of varying abilities to traverse the steep slope of the hill, it will provide access to an area of the park which has significant opportunities for interpretation and education and it also separates pedestrian traffic from future vehicular traffic on Landing Road.

Comment: Moving the constructed wetland west of where it is currently planned would place it closer to the stream inlet to Rockland Lake. This is a much more natural setting for wetlands and would better support the construction.

Response: Agreed. The wetland has been moved in the design.

Comment: The new comfort station near the nature center should not be included in the wetland section as it is not in keeping with this area of the park and interrupt the wetland bird habitat. Additionally the pathway from the playground to the planned comfort station would be through the newly constructed wetlands, a poor plan. An improved consideration would be to locate the comfort station closer to the playground and the parking area so that it is convenient to rollerbladers, cyclists and other users.

Response: The comfort station will not be constructed in a wetland. It will be constructed in a mowed area. The map shows the playground pathway bisecting a bermed area. The constructed wetland will not be impacted by the playground pathway.

Comment: The nature center should be a place of quiet, contemplation, and observation and should not have a playground located near it. It appears that the primary reason for proposing a toilet facility in this area is to support the playground. The proposed location for the comfort station near the nature center is in a wetland and should not be constructed.

Response: The playground will be a small, nature themed area for kids to learn and play. A much larger playground will be constructed between Parking Lot 1 and 2 and it is anticipated that the majority of children will use this facility. During the design phase, consideration will be given to separation, as was done with the moving of the Rockland Lake Trail in that area. The comfort station will not be located in a wetland or a wetland buffer area. Its chosen placement was to serve a wide variety of park users including, the nature center, playground and trail users. It will be available for use year round.

Comment: Although the nature center is under the authority of the Bear Mountain nature center, the volunteers look to the park staff at Rockland Lake for assistance. The master plan should recommend transferring authority of the nature center to Rockland Lake.

Response: Educational opportunities provided at the nature center will be better directed by the environmental education staff at the Trailside Museum, located at Bear Mountain State Park. Rockland Lake staff will still be available for other types of assistance as needed.

Comments:

- The master plan proposes significant investment in the nature center, yet the area is locked except for when the volunteers are there to open it. Park staff have indicated that the area is locked because there is insufficient staff to keep it open and control vandalism. The master plan should address how access to the area can be controlled.
- Given the lack of funding for improvements and staffing and lack of general public access to the nature center, there will be some difficulty funding a board walk replacement in the near future. With volunteer assistance towards construction and funding, immediate access of this area to hikers should be proposed in the master plan.

Response: The rehabilitation of the boardwalk and nature trail requires significant labor and funding to return them to a safe condition for patrons and is deemed a difficult project for volunteer coordination. Proposals to reopen these areas will be considered by PIPC/OPRHP.

Comment: Long Path parking should be provided at the Executive Golf Course.

Response: Parking is limited and serves golf patrons as a priority.

Comment: The master plan does not explain what the problem is with the current park manager residence and why the expense must be made to create a new one. This location appears too remote for a cultural resource center. The nature center should be expanded to include a cultural resource center.

Response: Information has been added to the plan on page 19 to further explain the reasoning behind the desire to move the park manager residence out of a very high public use area and the rehabilitation of the last intact structure from the River Park era.

Comment: The golf course improvements should be carried out by competent contractors in a timely manner. If construction is underway during the golf season, it should be coordinated to minimize impacts to play.

Response: State contracting laws will be followed to hire a competent contractor to improve the golf course in a timely manner. Minimizing impacts to play will be considered during construction.

Comment: Consider including an indoor facility that would be open year round, similar to a convention center in the South Recreation Area that will hold large groups of people.

Response: The planning team determined this type of facility is incompatible with the recreational theme for the park. An indoor facility of this type is significantly more expensive to build and maintain.

Comment: To improve the facilities at the park, more volunteers should be utilized for projects.

Response: Patrons wishing to volunteer at the park should provide their contact information to the park office.

Comment: To assist disabled individuals, a portion of an unused facility should be designated for temporary storage of disabled person's hard to transport equipment such as pedicycles, recumbent cycles and other wheeled non-motorized vehicles. This will allow convenient access to the equipment, exercise and enjoyment of the park.

Response: There are legal and administrative constraints associated with the storage of private property in the park.

Comment: A fountain should be included in the rock garden proposed in the South Recreation Area.

Response: During the design phase, a water feature will be considered for this area.

Comment: The roads in the park are in really bad shape, particularly if you are riding a bike. These roads should be repaved and consideration should be given to painted bike lanes or even a little separation.

Response: The roadway around Rockland Lake is a County road. This comment will be conveyed to Rockland County for consideration.

Education and Interpretive Programming

Comment: The plan should identify increased educational opportunities of the Lenape Indian occupation of the area.

Response: Additional information has been provided on the Lenape Indian occupation on page 10 and 15 of the Master Plan. Lenape Indian occupation will also be a part of the educational and interpretation program at the park.

Comment: The ice industry structures should be interpreted on the proposed Landing Road Trail.

Response: Ice industry structures will be interpreted on the Landing Road Trail.

Comment: Anything that we can do to enhance and preserve the rich history of the parks and how it links into the larger history of conservation in our nation should be encouraged.

Response: The history of conservation in the Palisades will be a theme of future education and interpretation programs and materials.

Comment: The nature center improvements are extremely important and provide a small opportunity for individuals to see and learn about some of our native plants and the historic plant matrix that once dominated the region. It should be moved up to a Priority 1 with full funding. The

nature center and boardwalk are one of the few directly educational opportunities in Rockland Lake Park and it is currently in a state of extreme disrepair and totally inaccessible to the public.

Response: There are many high priorities throughout the park, each dependent upon very limited funding; the nature center is no exception. As funding allows and staff time allows, additional attention will be given to the nature center and boardwalk.

Comment: The nature center redesign should include a restroom located inside it.

Response: The Planning Team felt a restroom constructed in the general area of the nature center would better serve a wide variety of park patrons rather than one inside the building.

Comment: Years ago, flyers were handed out identifying the various educational programs and activities at the park. This practice should be reinstated.

Response: Staffing levels throughout the agency have decreased significantly since that time. As a result, certain activities and services have had to evolve. A regional calendar of activities is provided at <http://www.njpalisades.org/calendar.html>. Patrons wishing to receive information can sign up to receive regular email updates from the Regional office. Additional information about the park is available from www.nysparks.com.

Recycling

Comment: Make recycling opportunities available at Rockland Lake.

Response: OPRHP/PIPC will evaluate the use of recycling containers. In the past public use of recycling containers at the park has resulted in co-mingling of garbage that exceeded 20% of the container. As a result recyclers will not accept any of the contents of the recycling container and we are charged more for the disposal by the recycler than through our normal waste stream.

Miscellaneous

Comment: The ferry connection in Haverstraw to Ossining should be mentioned in the plan.

Response: The ferry connection is mentioned on Page 16 of the Environmental Impact Statement.

Comment: Greater enforcement of park policies should be implemented at the park.

Response: Enforcement of park rules and regulations are dependent on the presence of sufficient staff. Generally staff levels over the past 5 years, including park police, have been reduced by more than 25% making overall enforcement efforts more difficult. Contingent upon staffing levels, every effort will continue to be made to provide appropriate enforcement of park rules and regulations.

Comment: People should not have to pay an entrance fee to volunteer in the park.

Response: Patrons wishing to volunteer do not need to pay admission. Please coordinate with park management before volunteering.

Persons / Organizations Who Provided Comments

Name	Title	Organization
Valerio, Paul	Resident	
Wortendyke, Carl	President	Cal Mart Enterprises
Morris, Wendy	Resident	
Perry, Margan	Resident	
Mart, Dave	Resident	
Johnson, Peter	Resident	
Cornell, Harriet	Chairwoman	Rockland County Legislator
Micucci, Mark	Resident	
Franke, Jacob	Member	NY/NJ Trail Conference
McGuinness, Kevin	Resident	
Perry, Winnston	Member	NY/NJ Trail Conference
Englert, Tomothy	Resident	
Turrin, Margie	Resident	
Knight, Robert	Historian	Town of Clarkstown
Larsen, Eric	Member	Palisade Park Conservancy
Miller, Robert	Member	Bicycle Touring Club of New Jersey
Vamos, Ivan	Board Member	New York Bicycle Coalition
Turrin, Margie	Resident	
Woolley, Ursula	Resident	
Goodell, Ed	Executive Director	NY/NJ Trail Conference
Mahar, Rob	President	Friends of Rockland Lake and Hook Mountain
Beaumont, Vicki	Resident	
Bassell, Stu,	Resident	
Seeman, Laurie	Resident	Strawtown Studio
Deppen, Jamie	Fish and Wildlife Tech.	NYS Department of Conservation
Stien, Bob	Resident	
Davis, Pierre	President	Valley Cottage Indians

References

(Nyack, 1992) LWRP

(TPPC 2011) <http://www.palisadesparksconservancy.org/parks/>

Casey 2011, Thomas F. X. Casey, Rockland County, NY Historian

USGS, 2011, Watershed data - <http://waterdata.usgs.gov/ny/nwis/>

NHP 2004, Evans, D.J., Paul Novack, and Troy Weldy, Rare species and ecological communities of Alfred E. Smith/Sunken Meadow State Park, New York State Office of Parks, Recreation and Historic Preservation and New York Natural Heritage Program. Albany, NY. 2004.

C-CAP, Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Coastal Services Center. 2006. *C-CAP zone 60 2006-Era Land Cover Metadata*. NOAA's Ocean Service, Coastal Services Center (CSC) Charleston, SC

OPRHP 2008, New York State Statewide Comprehensive Outdoor Recreation Plan and Generic Environmental Impact Statement 2009-2013. New York State Office of Parks, Recreation and Historic Preservation, Albany, NY. Dec. 2008.

DEC 2005, New York State Department of Environmental Conservation, New York State Standards and Specifications for Erosion and Sediment Control, August 2005

Department of Environmental Conservation (DEC). Ambient Air Quality Monitoring. <http://www.dec.ny.gov/chemical/8406.html>. February 2009.

DEC 2011. Water Quality Classification. <http://www.dec.ny.gov/permits/6042.html>
<http://www.dec.ny.gov/regs/4528.html#17778>,

NYSDOT 2011, New York State Department of Transportation, Invasive Species Best Management Practices for Transportation and Utility Right-of-Way February 24, 2011.

OPRHP 2012, Rockland Lake Study Report (Snow, Husson, and Terbush, 2012)

Personal Communication

Julian Adams, Field Services Bureau - OPRHP

Kath LaFrank, Field Services Bureau - OPRHP

Peter Olivia – Palisades Interstate Park Commission

Paula Torino – OPRHP – Palisades Region

Karl Roecker – OPRHP – Palisades Region

Robert Mahar, Friends of Rockland Lake and Hook Mountain <http://www.rocklandlakeandhookmt.org>

Appendix

Appendix A – Cultural Resource Review - Categorical Exclusion

**New York State Office of Parks, Recreation and Historic Preservation
Minor Project Activities with No Effect on Historic Properties and are Exempt from
Consultation**

The following project activities are exempt from Office of Parks, Recreation and Historic Preservation/State Historic Preservation Office (SHPO) consultation and review because it has been determined that they will not likely change the quality of historic resources provided the following conditions are met:

- The proposed activity is a stand-alone project; and
 - The proposed activity does not include and is not located in or contiguous to any historic or archaeological resource 50 years of age or older; nor listed on the State or National Register of Historic Places; nor is it a National Historic Landmark (e.g., historic structures, foundations, and out buildings, archaeological sites; historic gardens; historic viewsheds and cultural landscapes); and
 - The proposed project must be limited to one of the activities listed below.
1. In kind bridge repair or replacement involving the same abutment.
 2. In kind repair/replacement of below grade utilities such as septic systems, water lines, electric lines and fuel supply lines within the same utility trench.
 3. In kind repair/replacement of existing septic systems, storm drainage, or fuel storage where significant site features, such as mature vegetation, are not impacted.
 4. Trail construction on slopes greater than 12% and trail maintenance where no change in width, depth, vertical alignment, or drainage is to occur.
 5. In kind culvert replacement.
 6. Repaving or regrading of roadways or pathways where no change in width, surface material, depth, vertical alignment, or drainage is to occur.
 7. Repair of erosional issues/washouts due to flooding within 10 ft of the washout
 8. Removal of root balls from downed trees.
 9. Removal of invasive species that does not entail grubbing or grading.
 10. In kind repair/replacement of existing curbing or sidewalks.
 11. Planting trees when excavation will not exceed 2 ft. in diameter.
 12. Digging post holes for signs and fences that will not exceed 2 ft. in diameter.

* If during the course of construction any artifacts, archaeological features, or historic remains are discovered, work in the vicinity of the discovery must be stopped immediately and the Archaeological Unit of the SHPO must be contacted for further guidance.

Appendix B – BCA Program - Management Guidance Summary

**New York State
Bird Conservation Area Program
Management Guidance Summary**

Site Name: Rockland Lake Complex BCA

State Ownership and Managing Agency: Office of Parks, Recreation, and Historic Preservation

Location: Rockland County, Towns of Clarkstown and Haverstraw

Size of Area: 1700 acres

DEC Region: 3

OPRHP Region: Palisades

General Site Information: The Rockland Lake Complex BCA is located within four state parks that share adjacent boundaries; Rockland Lake, Nyack Beach, Hook Mountain, and Haverstraw Beach State Parks (Figure 1). These facilities are located along the west bank of the Hudson River, primarily in the Town of Clarkstown, but also including the Town of Haverstraw to the north. The parks are a mix of developed and undeveloped lands, containing a 256-acre lake (Rockland Lake), a forested wetland, and precipitous ledges. The parks offer recreational facilities including a pool, tennis courts, picnic areas, and trails. Rockland Lake State Park also includes two golf courses, large parking areas, and buildings that are not included in the BCA boundary. An environmental education center housed at Rockland Lake State Park operates sporadically in the summer months. Hook Mountain has previously been designated as an Important Bird Area (IBA) by Audubon New York (Burger and Liner 2005).

Vision Statement: Recreational/interpretive opportunities and access will continue in a manner consistent with the conservation of the diverse assemblage of bird species using the area for breeding, migration, and wintering. The BCA will remain in a relatively natural condition.

Key BCA Criteria: Waterfowl concentration site; migratory concentration site; diverse species concentration site; individual species concentration site; species at risk site, and bird research site (ECL §11-2001, 3. a, e, f, g, h, and i).

Rockland Lake regularly supports 1,000 to 1,500 waterfowl of multiple species, including northern shoveler, gadwall, and coot in winter during open water conditions and, on occasion, likely supports up to 2,000 waterfowl. During spring and fall migration, songbirds can be found in abundance along the forested banks of the Hudson River. Of 75 Neotropical migratory songbird species that breed in New York, 55 have been observed within the BCA. Thirty-nine of these are forest dwelling neotropical migrants and, of these, fourteen have been reported as breeding. Overall, of the more than 150 species that have been reported in the parks, 34 have been confirmed as breeding. Raptors abound during migration, numbering in the thousands each fall. Data has been kept on migrating raptors at the Hook Mountain Important Bird Area since 1971. Rare and declining species found in the parks include peregrine falcon (NYS Endangered), bald eagle (NYS Threatened), pied-billed grebe (NYS Threatened), and Cooper's Hawk (NYS Special Concern). Additional species of conservation concern may be seen during migration.

Critical Habitat Types: The Rockland Lake Complex BCA contains a 22-acre red maple-hardwood swamp and a 48-acre deep emergent marsh along the northwestern edge of Rockland Lake that provides habitat for a variety of birds, including breeding green herons (Carol Weiss pers. comm. 2012), pied-billed grebes, and wood ducks. The 229-acre Rockland Lake supports numerous migratory waterfowl including gadwall, northern shoveler, bufflehead, wood duck, black duck, and coot, among others. Forested habitats comprise the eastern edge of the parks, with Appalachian oak-hickory, oak-tulip tree, and successional southern hardwood forests the most common ecological community types. These forested habitats provide important stopover and breeding sites for forest-breeding species such as Eastern wood-pewee, wood thrush, ovenbird, and hooded warbler. Cliffs adjacent to the Hudson River are essential for one species of conservation concern, the peregrine falcon, and also provide important habitat for common ravens that nest there. Multiple species of warblers are common during spring and fall migration, red-shouldered hawks (NYS Special Concern) and broad-winged hawks are present during migration, Cooper's Hawks (NYS Special Concern) breed within the park forests, and Bald Eagles and Ospreys use Rockland Lake in the winter and during migration.

Operation and Management Considerations:

- *Identify habitat management activities needed to maintain site as a BCA.*

Several invasive plant species, in particular mile-a-minute vine and black swallow-wort, have successfully established themselves within the BCA. Many of these invasive species impede growth and regeneration of forested habitats. These non-native species inhibit growth of native vegetation and reduce habitat quality for birds. Management should focus on efforts to inhibit the establishment and spread of non-native vegetation, and encourage growth of native species in the BCA.

Abundant deer populations within the BCA also threaten bird populations at the site. Overbrowsing by deer has, in many areas, greatly reduced the diversity and density of shrub and understory vegetation. Avian species that rely upon these layers of the forest likely have greater difficulty finding nesting and foraging locations (McShea and Rappole 2000). Furthermore, heavy deer browsing favors establishment of non-native species, which generally provide lower-quality bird habitat (Schmidt and Whelan 1999, Borgmann and Rodewald 2004). OPRHP staff should explore options to limit deer impacts to forest health and regeneration.

- *Identify seasonal sensitivities; adjust routine operations accordingly.*

Bald Eagles regularly use Rockland Lake for foraging and perching locations in the winter. Protection of important perching areas will be considered in any viewshed maintenance activities along the shoreline.

- *Identify state activities or operations that may pose a threat to the critical habitat types identified above; recommend alternatives to existing and future operations, which may pose threats to those habitats.*

There are currently no state activities that pose a threat to critical habitat types.

- *Identify any existing or potential use impacts; recommend new management strategies to address those impacts.*

There are currently no existing or potential use impacts that pose a threat to critical habitat types.

- *Assess current access; recommend enhanced access, if feasible.*

While there are several trails available for hiking and bird watching, the rehabilitation of the Nature Center boardwalks through the red maple-hardwood swamp and shrub thicket habitats would provide additional hiking and bird watching opportunities for park patrons.

Education, Outreach, and Research Considerations:

- *Determine education and outreach needs; recommend strategies and materials.*

A BCA kiosk will be designed and installed in an appropriate location within the park, and will illustrate the birds and bird habitats found within the Rockland Lake Complex.

An updated bird checklist for the BCA will be developed and be made publicly accessible.

Partnerships with local bird conservation groups, such as the Rockland Audubon Society, should continue in order to enhance appreciation and conservation of the unique bird community at the BCA.

- *Identify research needs; prioritize and recommend specific projects or studies.*

Long-term monitoring of the bird community is recommended to identify management needs and help evaluate the success of habitat improvement actions. Invasive species management, including mile-a-minute vine biocontrol, should help improve the habitat in the parks. Deer management will address overbrowsing and provide a benefit to the forested habitats in the parks. Local colleges, the Palisades Interstate Park League of Naturalists, and the Rockland Audubon Society could be enlisted to assist with this. Raptor migration monitoring should continue at Hook Mountain IBA.

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Sources:

Andrle, R. F., and J. R. Carroll, Eds. 1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Borgmann, K. L., and A. D. Rodewald. 2004. Nest predation in an urbanizing landscape: the role of exotic shrubs. *Ecological Applications* 14: 1757-1765.

Burger, M. F. and J. M. Liner. 2005. Important Bird Areas of New York: Habitats worth protecting. Second Edition. Audubon New York, Albany, NY.

Evans, D. J., P.G. Novak, and T. W. Weldy. 2001. Rare species and ecological communities of High Tor, Hook Mountain, Haverstraw Beach, Nyack Beach and Rockland Lake State Parks. New York

Natural Heritage Program, Latham, NY.

McGowan, K. J., and K. Corwin, eds. 2008. The atlas of breeding birds in New York State: 2000-2005. Cornell University Press, Ithaca, NY.

McShea, W. J., and J. H. Rappole. 2000. Managing the abundance and diversity of breeding bird populations through manipulation of deer populations. *Conservation Biology* 14: 1161-1170.

Schmidt, K. A., and C. J. Whelan. 1999. Effects of exotic *Lonicera* and *Rhamnus* on songbird nest predation. *Conservation Biology* 13: 1502-1506.

Smith, K. J. 2011. Rare species and ecological communities of High Tor, Hook Mountain, Haverstraw Beach, Nyack Beach and Rockland Lake State Parks. New York Natural Heritage Program, Albany, NY.

Appendix C - Coastal Assessment Form

NYS coastal policies are organized under major headings. Those policy areas and specific policies applicable to the master plan are listed with a brief discussion on the extent of consistency of the master plan with the coastal policy.

Refer to Chapter 5 of the Environmental Impact Statement (EIS), Environmental Impacts and Mitigation, under Relationship to other Programs, for an explanation of the general applicability of the coastal program to state agency actions, as well as OPRHP's certification of consistency with state coastal policies.

Development Policies

POLICY 2- FACILITATE THE SITING OF WATER-DEPENDENT USES AND FACILITIES ON OR ADJACENT TO COASTAL WATERS.

The park complex provides both water-dependent and water-enhanced uses. The master plan will be consistent with this policy as all of these uses will continue under the proposed plan and will be enhanced as well. Various actions described in the master plan support water-dependent recreational uses such as fishing, boating, and wildlife viewing. The parking area at Nyack Beach State Park that is both necessary for functioning of water-dependent uses such as the car top boat launch will remain the same. Water-enhanced uses such as shoreline trail improvements, additional interpretation of the River Parks, the ice industry, quarry industry and wildlife viewing are also encouraged and facilitated by the implementation of the master plan.

Actions proposed under the master plan are compatible with existing/adjacent uses (mainly park land) and protection of other coastal resources (no actions will negatively impact coastal resources.)

Fish and Wildlife Policies

POLICY 7- SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS WILL BE PROTECTED, PRESERVED, AND WHERE PRACTICAL, RESTORED SO AS TO MAINTAIN THEIR VIABILITY AS HABITATS.

The park complex is located next to two Significant Coastal Fish and Wildlife Habitats (SCFWH): the Haverstraw Bay Area is located off of the shore of Haverstraw Beach, Hook Mountain and Nyack Beach State Parks. This area is the most extensive shallow estuarine habitat in the lower Hudson River and is a major spawning, nursery and wintering area for various estuarine fish species. Shortnose sturgeon (*Acipenser brevirostrum*) are regularly seen in this area. The master plan will not affect these areas and calls for increased protection of water resources as outlined in the master plan.

In addition, the designation of a BCA within the park will promote protection and recognition of avian habitats along the Hudson River. Such designation will encourage the public to support or visit the park complex because of the bird species that may exist there and to be more sensitive to their habitats.

The plan also calls for the use of porous pavement for the North and South Lot redevelopment and the construction of a wetland for stormwater filtration. Regional engineers will investigate

opportunities to use the former South Pool as a subterranean detention basin for either natural filtration of stormwater or for its reuse to irrigate the adjacent athletic fields.

Flooding and Erosion Hazards Policies

POLICY 12- ACTIVITIES OR DEVELOPMENT IN THE COASTAL AREA WILL BE UNDERTAKEN SO AS TO MINIMIZE DAMAGE TO NATURAL RESOURCES AND PROPERTY FROM FLOODING AND EROSION BY PROTECTING NATURAL PROTECTIVE FEATURES INCLUDING BEACHES, DUNES, BARRIER ISLANDS AND BLUFFS.

The master plan proposes the rehabilitation of the Nyack Beach seawall which will reduce erosion into the Hudson River. It also recommends trail improvements to the River Trail at key points where erosion takes place and culvert rehabilitation beneath Landing Road which is eroding.

General Policy

POLICY 18- TO SAFEGUARD THE VITAL ECONOMIC, SOCIAL AND ENVIRONMENTAL INTERESTS OF THE STATE AND OF ITS CITIZENS, PROPOSED MAJOR ACTIONS IN THE COASTAL AREA MUST GIVE FULL CONSIDERATION TO THOSE INTERESTS, AND TO THE SAFEGUARDS WHICH THE STATE HAS ESTABLISHED TO PROTECT VALUABLE COASTAL RESOURCE AREAS.

The actions proposed in the master plan will not significantly impair valuable coastal waters and resources. The master plan has been developed through a process which takes into account the social, cultural, economic and environmental interests of the state. This process is described in Chapter 1 of the Environmental Impact Statement - Planning and Environmental Review, Guiding Principles and Policies.

Public Access Policies

POLICY 19- PROTECT, MAINTAIN, AND INCREASE THE LEVEL AND TYPES OF ACCESS TO PUBLIC WATER-RELATED RECREATION RESOURCES AND FACILITIES.

The park complex provides significant public access to over five miles of Hudson River shoreline, as well as access through car-top boat launch site at Nyack Beach State Park. The master plan is consistent with this policy as it preserves these types of activities, and also proposes to improve recreational access. Canada goose management will continue in order to keep the Nyack Beach area and other areas clean.

Recreation Policies

POLICY 21- WATER-DEPENDENT AND WATER-ENHANCED RECREATION WILL BE ENCOURAGED AND FACILITATED, AND WILL BE GIVEN PRIORITY OVER NON-WATER-RELATED USED ALONG THE COAST.

The park complex provides both water-dependent and water-enhanced recreation. Water-dependent recreation activities provided at the parks include a boat launch, fishing, and wildlife viewing opportunities. Water-enhanced recreation activities include picnicking, trails and scenic views. All of these activities will be continued and enhanced under the proposed master plan.

Historic and Scenic Resources Policies

POLICY 23- PROTECT, ENHANCE AND RESTORE STRUCTURES, DISTRICTS, AREAS OR SITES THAT ARE OF SIGNIFICANCE IN THE HISTORY, ARCHITECTURE, ARCHAEOLOGY OR CULTURE OF THE STATE, ITS COMMUNITIES, OR THE NATION.

The proposed master plan is consistent with this policy as significant historic and cultural resources within the park complex will be stabilized, protected and where feasible, restored. In some instances, structures that are deemed beyond reasonably feasible to stabilize will be removed. The plan calls for the preparation of a Cultural Resource Plan to document these resources and plan for their stabilization, renovation or removal. The present park manager's residence and historic structure will be adaptively reused as a Cultural Interpretation Center. The historic seawall and retaining walls at Nyack Beach will be rehabilitated and compatible adaptive reuses for the Nyack bathhouse will be considered. All designs impacting historic structures or archaeologically sensitive areas will be reviewed by the State Historic Preservation Office.

POLICY 24 - PREVENT IMPAIRMENT OF SCENIC RESOURCES OF STATEWIDE SIGNIFICANCE.

The unique aesthetic values of Hook Mountain in the Palisades and its public accessibility were important considerations throughout the master planning process. The protection of the high scenic value that exists here was a major goal of the master plan and these resources will not be impaired in the implementation of any of the actions proposed under the plan. The plan calls for maintenance of existing significant scenic vistas and the restoration of scenic views that have been lost over time. In addition, OPRHP/PIPC will continue to monitor adjacent uses and proposals to ensure that there are no impacts on the viewshed of the park.

Water and Air Resources Policies

POLICY 33- BEST MANAGEMENT PRACTICES WILL BE USED TO ENSURE THE CONTROL OF STORMWATER RUNOFF AND COMBINED SEWER OVERFLOWS DRAINING INTO COASTAL WATERS.

POLICY 37- BEST MANAGEMENT PRACTICES WILL BE UTILIZED TO MINIMIZE THE NON-POINT DISCHARGE OF EXCESS NUTRIENTS, ORGANICS AND ERODED SOILS INTO COASTAL WATERS.

Stormwater management improvements (bio-filtration swales, etc.) will be included in the redesign of the North and South parking areas to provide additional protection of the water quality of the Hudson River. In addition, the agency will continue to implement the Integrated Pest Management (IPM) practices at both the Executive and Championship Golf Courses. Best Management Practices for Canada goose control will result in fewer nutrients entering the river through the park, as well.

Wetland Policies

POLICY 44 - PRESERVE AND PROTECT TIDAL AND FRESHWATER WETLANDS AND PRESERVE THE BENEFITS DERIVED FROM THESE AREAS.

Protection of all water resources was an important goal of the master plan. Stormwater management from the vast North and South parking lots will be improved to filter water before it enters into the

wetland, Rockland Lake and the Hudson River. The master plan will be consistent with this policy through the implementation of these strategies.

